

# Electric Railway Journal

A CONSOLIDATION OF

Street Railway Journal and Electric Railway Review

VOL. XXXV.

NEW YORK, SATURDAY JUNE 11, 1910

No. 24

PUBLISHED WEEKLY BY THE

**McGraw Publishing Company**

239 WEST THIRTY-NINTH STREET, NEW YORK

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TERMS OF SUBSCRIPTION:

For 52 weekly issues, and daily convention issues published from time to time in New York City or elsewhere: United States, Cuba and Mexico, \$3.00 per year; Canada, \$4.50 per year; all other countries, \$6.00 per year. Single copies, 10 cents. Foreign subscriptions may be sent to our European office.

Requests for changes of address should be made one week in advance, giving *old* as well as new address. Date on wrapper indicates the month at the end of which subscription expires.

NOTICE TO ADVERTISERS.

Changes of advertising copy should reach this office ten days in advance of date of issue. New advertisements will be accepted up to Tuesday noon of the week of issue.

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Entered as second-class matter at the post office at New York, N. Y.

Of this issue of the ELECTRIC RAILWAY JOURNAL, 8500 copies are printed.

NEW YORK, SATURDAY, JUNE 11, 1910.

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## Summer Accidents

This is the season of the year when accidents on single track lines are apt to occur with distressing frequency. In the past some of these casualties have been due to the actual disobedience of despatching orders. Accidents of this kind cannot always be prevented even by the best management, but in some cases the responsibility has been traced directly to the failure of the executive officers to maintain discipline. In others, fatalities have occurred because not enough effort was exerted to keep track weeds and grass low enough to allow braking on dry rails. Still other accidents have resulted from the failure to cut down trees and undergrowth at curves wherever opposing motormen would be unable to see each other within safe braking distance. A heavily-wooded curve may be very picturesque to the passenger, but it is not conducive to safe railroading.

## A List of Remedies

Three remedies for the correction of the results of the illogical fare situation on urban lines are suggested by President William A. House, of the United Railways & Electric Company, of Baltimore, in his annual report for 1909. They are an increase in the unit rate of fare, a contraction of the fare limits or a readjustment of the transfer system. A solution of the problems arising from the rapid and unavoidable increases in costs of operation is the most important question confronting the industry. Some of the remedies that may be adopted under existing laws and franchises have already been put in force by various companies. The most conspicuous of these are the 6-cent fare units adopted by several Massachusetts companies. City companies, however, are generally so bound by franchise contracts that a radical advance in rates is impracticable. A contraction of average fare limits might be secured by the abandonment of the policy of building extensions into outlying and sparsely settled districts, as the reversal of the usual liberal practice of companies in extension would produce further congestion of population and traffic on existing lines. Curtailment of the transfer system is a recommended remedy that lies within the power of some companies to make effective. But to the list of restoratives given by Mr. House we add as a serious possibility a reduction in the burdensome direct and indirect taxes levied upon street railway companies. Freedom from municipal taxation would be a helpful decrease in costs and a contribution which communities could make without interference with the convenience of the traveling public.

## Preparing Open Cars for Service

The importance of preparing open cars for service in the early spring is widely recognized by the practice of carrying on a general overhauling of this type of equipment during the

winter months. It frequently happens, however, that the actual placing of open cars in service, particularly on short notice, is delayed by minor reasons. In an advanced season like the present one the demands of the transportation department for open cars are generally irregular and frequently unexpected in localities where the climatic conditions are variable in the extreme. Hence it is desirable to perfect the car house organization for handling the open cars quickly and to pay special attention to the question of spare parts in order that the company may not lose the revenue from pleasure riding in the early summer. Cars which have been thoroughly overhauled during the winter are frequently held back from service by the absence of proper signs, shortage of trolley poles, lack of enough registers, trolley catchers, sand pails, fuses, and other fittings. On some roads where this equipment is shifted from box to open cars as needed the stock tends to run so low that it is now and then necessary to wait until a box car completes its trip before an open car which is wanted can be fully equipped. In the praiseworthy efforts to economize by cutting down the local investment in spare parts there lurks no little danger of going so far that equipment may be kept off the line when patronage awaits it. Much good can be accomplished by the interchange of necessary spare parts among different car houses, provided a suitable record is kept of the material and its disposition. A careful inspection of the rheostats of single-motor cars, the correct adjustment of all moving parts and close supervision of the initial handling by motormen are also desirable.

#### Standard Sizes for Publications

At the last meeting of the Central Electric Railway Association a resolution was adopted recommending to publishers of technical papers and to manufacturers of railway equipment a standard maximum size of 9 in. x 12 in. for all publications and catalogs. The Master Car Builders' Association adopted as standard in 1894 three sizes for pamphlets and trade catalogs, the largest of which was 9 in. x 12 in., and we believe that manufacturers of steam railway equipment have adhered closely to these standard sizes in designing their printed matter. Many of the catalogs of these manufacturers have printed in small letters on the top margin of the title page the words "M. C. B. Standard, 9 in. x 12 in." A similar practice would soon be established in the electric railway field if the manufacturers realized the importance of standardization of sizes to the railway companies. It is a large task to file and index for quick and convenient reference all the printed matter which comes into the office of even a small railway company. Any system of filing is greatly complicated if provision must be made in special filing cases for catalogs of odd sizes. There is no advantage to the manufacturer in adopting unusual dimensions for catalogs merely to make them different from the publications of a competitor. Individuality in advertising literature can be obtained in other ways which do not affect the convenience of the buyer to which it is sent. Some of the member-companies of the Central Electric Railway Association have adopted the practice of stamping on all letters sent out by the purchasing department the words "No catalogs over 9 in. x 12 in. will be filed." It should not be necessary for a manufacturer to receive more than one letter so stamped before he is convinced of the value to him of standardizing this essential part of his product.

#### LIGHTNING ARRESTERS

A lightning arrester has been defined as a device which sometimes deflects lightning harmlessly away from the apparatus which it is supposed to protect. Nevertheless, lightning arresters are extremely necessary on all aerial lines, and at this season of the year many electric railway companies are looking very carefully into the condition of their arresters, or have already done so, in preparation for the summer storms. The trouble with lightning arresters, so far as electric railways are concerned, is that one not only has to protect the stations, but also has to protect a large number of car equipments scattered over the entire system. It is comparatively easy to secure to the station a fairly satisfactory immunity from damage. But a car equipment is extremely thin-skinned as regards lightning, compared with the station transformers and heavily insulated generators. The comparatively mild induced discharges which usually cause damage upon electric railway systems would, as a rule, be dealt with by the arresters of a modern station equipment without the slightest difficulty. A line fairly hit by a lightning discharge is quite another matter, even if the discharge is only a branch one of moderate intensity, and the result is generally to put the line out of service even if the apparatus is successfully protected.

For the electric railway manager the annual problem is to devise and install means sufficiently effective to keep lightning from burning out the car equipments and putting an end to efficient service. In the early days of electric car lines the lightning arrester equipment was almost always at the station and the cars had to look out for themselves. Later arresters were installed on the cars, but it has always been difficult to get a car arrester sensitive enough to avert short-circuits of controller or field coils when there is severe discharge from the trolley wire. Consequently it has become the practice also to install lightning arresters liberally upon the line with the intent of heading off discharges before they actually get to the car. The severest conditions with respect to lightning are met in the Rocky Mountain region, where on some systems they have come to installing arresters every 500 ft. or 600 ft., on exposed lines. It is a well-known fact that certain points on an electric circuit may be so exposed as to be particularly liable to be struck by lightning and one of the first duties of the engineer in charge is to locate and protect such points, but the majority of so-called lightning strokes which disable electric cars are induced strokes not arising because the line is directly struck and hence not to be averted by protecting merely exposed points.

Practice differs very much regarding arresters on railway systems, but considering the nature of the apparatus to be protected and the ease with which it is temporarily crippled, it seems to us that the arresters generally used err on the side of too little sensitiveness. Thunderstorms do not come without warning and it might even be possible for the motorman to switch on almost any kind of lightning arrester protection, even if it is not considered advisable to keep it constantly in action. There is much to be said in favor of arresters so sensitive as to spill over through a suitable resistance on very small provocation. It is much better to have temporary trouble with an arrester than it is to burn out a car equipment, particularly if the arrester is not too expensive and is easily repaired. It is good practice, therefore, to make sure by frequent inspection, especially during the summer season when thun-

derstorms are frequent, that the arresters are in good operating condition, and even that they are apparently hypersensitive, because a very short spark indeed is sufficient to ground a field coil or short-circuit a controller.

### TWO MOTOR EQUIPMENTS FOR CITY CARS

In view of the present day tendency toward reducing the weight of cars for city service we venture the suggestion that many companies which are now operating four-motor equipments could save weight, cost of maintenance and possibly cost of power without seriously affecting their schedule speeds by adopting two-motor equipments of suitable power and design. There have been remarkable developments in railway motor construction since four-motor equipments were introduced 10 or 12 years ago to meet the needs of a service which had outgrown the capacity of two motors of the sizes then built. Modern motors for city service are rated as high as 90 hp on 600 volts, and, owing to improved details of insulation, slotted commutators, ventilation, brush design and the use of commutating poles, they are capable of giving good service when worked continuously at their full load capacity. Two such motors are more than powerful enough to maintain a safe and reasonable schedule speed under the heaviest cars required for almost any city. In view of this development, it might be profitable for many companies now using four-motor equipments as standard to make operating tests with a sample two-motor outfit. We have in mind one city where such an experiment, as suggested by the investigations of the Metropolitan Street Railway of New York, has led to a considerable saving, both in weight of motors and first cost, on new motive equipment. This company had always feared that its narrow-grooved rail would not give sufficient adhesion with two motors, but a thorough test with two-motor equipments proved otherwise.

The saving in weight of a complete two-motor equipment with control over a four-motor equipment of equal horse-power is as much as 3000 lb. per car. The Philadelphia Rapid Transit Company uses four GE-70A motors of 40 hp each under its standard semi-convertible cars having 28-ft. bodies. These motors with control weigh 12,460 lb. As compared with this weight, the 31-ft. convertible cars of the Third Avenue Railroad in New York are equipped with two Westinghouse 310 motors of a rated capacity of 75 hp on 600 volts which weigh with control only 8010 lb. The standard two-motor equipments of the Metropolitan Street Railway in New York are also the Westinghouse 310 and the GE-210 which are nearly identical in their electrical characteristics. This two-motor equipment was adopted as standard after an exhaustive series of tests in comparison with GE-80 four-motor equipments weighing complete with control 12,860 lb. The saving in weight of single-motor trucks over double-motor trucks is also large, amounting to 4430 lb. per car in the Metropolitan cars. By the adoption of two motors instead of four a total reduction in the weight of electrical equipment and trucks of 9280 lb. was effected.

The cost of maintenance of two large motors is much less than for four smaller motors of equal power. Lubrication, brush renewals, babbiting of bearings and repairing of mechanical injuries are items of motor maintenance cost which are approximately proportioned to the number of motors in service and not to their capacity. Owing to the smaller margin of adhesion over torque with a two-motor equipment the motors are seldom subjected to prolonged or injurious overloads since the wheels will slip before much damage is done.

Theoretically, two large motors will have a higher electrical efficiency than four smaller motors of approximately equal capacity, and the gear losses are also less. As long as the wheels do not slip this theoretical advantage should show in actual operation. In the tests previously referred to, which were made by the Metropolitan Street Railway, a saving of 10 per cent in power consumption per ton-mile was found in favor of the two-motor equipments. These tests also showed that there was practically no difference in the rate of acceleration on dry rail in favor of the four-motor equipment and on wet rail not enough to affect the schedules. Modern single-motor trucks carry 75 per cent of the load on the driving wheels, and unless the grades to be climbed are very steep and the acceleration required is close to the maximum for comfort, this proportion of the total weight of a car is sufficient to prevent the wheels slipping when full power is being exerted by the motors. The danger of slipping exists, in any event, only during the first few seconds of acceleration, after which the car resistance drops rapidly. The saving in first cost, maintenance and weight obtained with two-motor equipments of adequate size to fulfill reasonable requirements of ordinary city service would seem to be great enough, at least in most cases, to overbalance the questionable advantage of quicker acceleration obtained with four motors.

### THE VALUE OF TRAFFIC CURVES

The managers of city railway systems which do not embrace more than half-a-dozen routes usually feel that they know every detail of the traffic distribution so well that it is unnecessary to go to the trouble of preparing graphic records. The correctness of this point of view, however, is not proved by the experience of those who have had occasion to prepare traffic curves, even for cities of less than 40,000 population as they have found that such curves will betray the riding peculiarities of the public much more clearly than a mere tabulation. From such a record for example, it is easy to observe whether the passengers take kindly to short-trip cars or neglect them in favor of through cars even when they do not ride to the end of the line. In some cases of this kind, the overcrowding of the through cars has been found to be due to the fact that the short-haul passengers wish to ride with friends who are going further. In other instances, it is due to the company's employment of the more attractive cars for the through run or to the condition that the long-haul cars are advertised to leave some prominent traffic point on the even quarters of the hour and so their leaving time is more readily kept in mind.

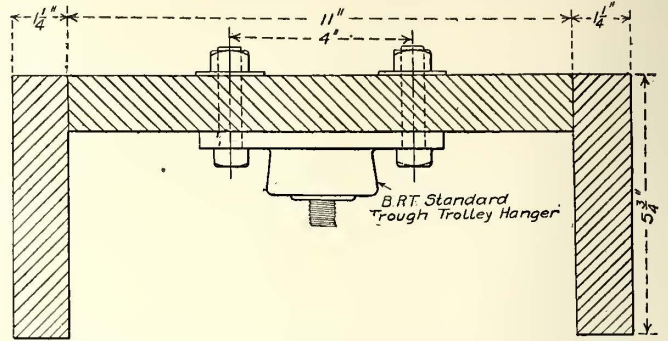
Traffic curves, furthermore, are not only of value to the company in making up its schedule, but are also an aid in its relations with the public. When a complaint is made about the service on a certain line, it is surely convenient to be able to prove graphically that in the course of the day's operation the number of seats furnished far exceeded the passengers and that the schedules adopted are based strictly on the amount of traffic which the line brings. Every company ought to know just how much it costs to carry a passenger, not only on every single line, but on portions of the line as well, particularly where an extra fare is charged on the suburban extensions. Of course, it is not necessary that graphic analyses of this kind should be made out every day. Often one week or one day in the month, as well as holidays, would suffice for most useful purposes.

**BROOKLYN LINE DEPARTMENT—THE NOVEL IRON-BAR OVERHEAD CONSTRUCTION**

One of the most interesting and novel features of the overhead construction of the Brooklyn Rapid Transit System has been the invention and application on a wide scale of iron-bar overhead conductors. These bars are used wherever traffic is heavy and at every important intersection under the elevated railway structure.

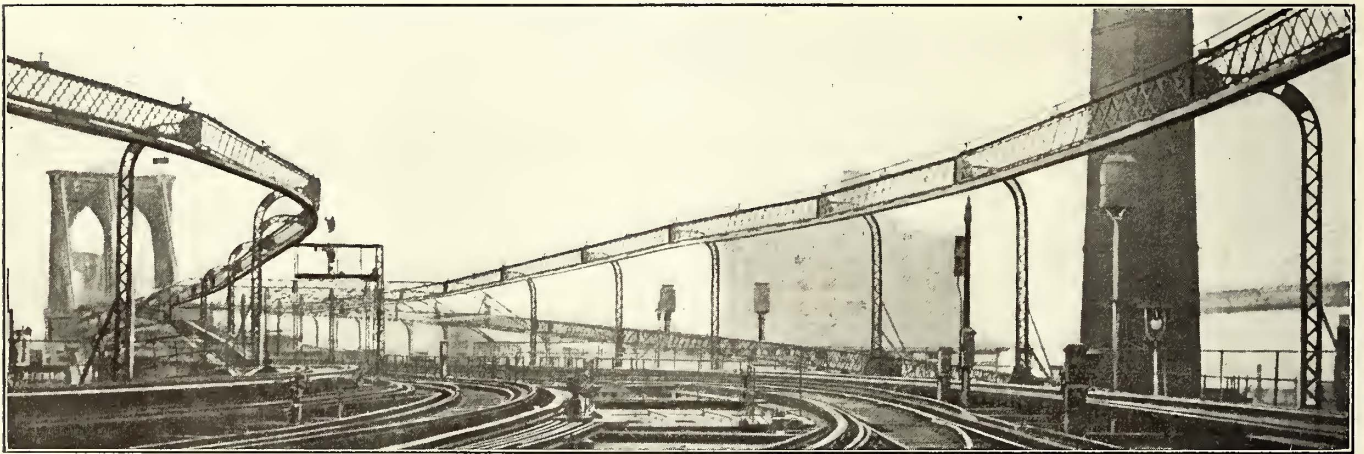
The adoption of this practice meant a great deal more than the simple suspension of the bars, as it was necessary to design section insulators, expansion joints, frogs, diagonals, feed-in castings and other auxiliaries necessary to obtain a well-rounded and complete system of overhead construction. All of these details have been worked out with such success that the bar-iron overhead suspension, wherever used, has proved remarkably reliable and far easier to maintain than methods hitherto regarded as standard. Admitting the reliability of the iron bars for permitting a practically uninterrupted car service, the objection might be raised that they must be very hard on the trolley wheels. This drawback has not been an appreciable factor, however, because the bars are installed only in locations

superseded by 3/8-in. x 2 1/4-in. bars of round-edge iron. The latter have been found cheaper than the channels, can be more readily purchased in the open market and are spliced and



**Brooklyn Line Department—Trough Work at Williamsburg Bridge Approach**

installed more easily. In cases of emergency, even a square-edge bar may be installed, leaving the trolley wheels to round



**Brooklyn Line Department—Iron-Bar Construction from Davit Trusses on Brooklyn Bridge Incline, Looking Toward Manhattan Borough**

where the traffic is too heavy to operate the cars at high speeds. Hence, there is little chance for the occurrence of severe arcing, except, perhaps, at the inclines on the Brooklyn Bridge.

The bars may be of any commercial grade of iron or steel, and at this time are purchased at 1 2/3 cents per pound.

The bar-iron construction first was tried out some eight

The bar suspension is also of the greatest value where clear-



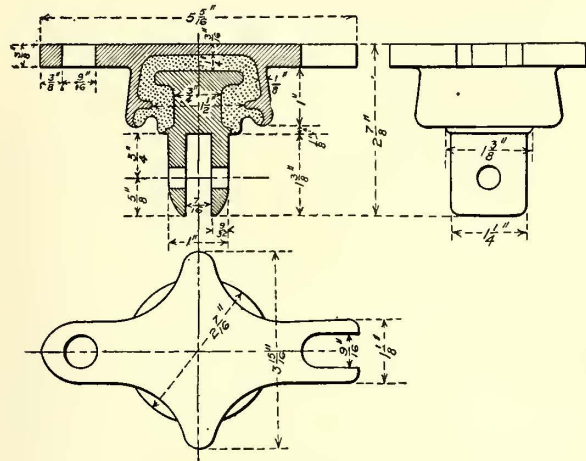
**Brooklyn Line Department—Iron-Bar Construction from Davit Trusses, Looking Toward Brooklyn Borough**

years ago at Atlantic and Flatbush avenues, where the trolley wire had a very short life owing to the heavy traffic and the limited clearance under the elevated structure. The original conductor was a section of light channel iron, which has been

ances are so low that the trolley contact has to be offset 4 in. to 6 in. from the center line in order to permit the cars to operate at all, considering the bending of the trolley poles. An idea of the durability of this work may be obtained from the statement

that all the bars at the Brooklyn Bridge terminal on the Brooklyn side have been in use since April, 1908, without change, and are expected to last until February, 1911, at least, whereas even

which allows for the expansion and contraction of the bar. A device similar to the foregoing is the end casting of an expansion joint as used on the Williamsburg Bridge and shown on

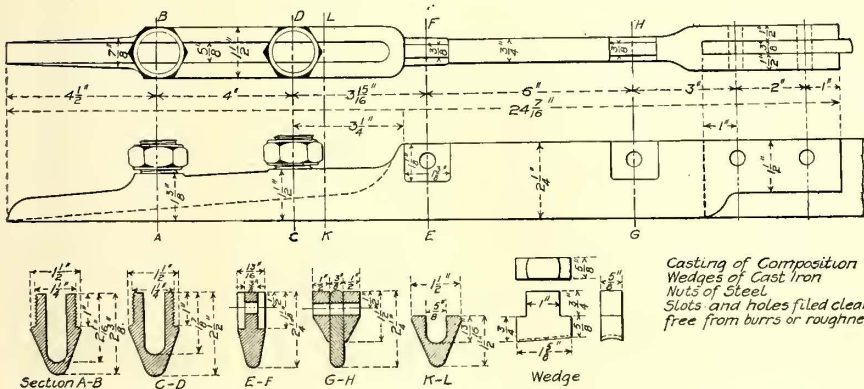


Brooklyn Line Department—Trough Bar Hanger

phono-electric wire was not serviceable for more than five months at the same location. At other places frogs and diag-

the same page. This casting is arranged for two points of suspension, a condition which is desirable in some locations.

No provision is made for expansion and contraction, as this is taken care of by the expansion joints installed for this purpose. An expansion joint of the type in question is shown in an accompanying drawing. Attention is called to the spacing blocks, which permit the bolts of the expansion joint to be set up tight without preventing the free back and forth movement of the bars. In order to receive the trolley wheel, each bar is milled on one side so that the width of the bar at the line of contact with the trolley wheel is only slightly larger than the standard bar. Formerly, the expansion joints were made with a sleeve and a bar telescoping into it. Whenever traffic was severe this construction wore out rapidly and hence it was found necessary



Brooklyn Line Department—End Casting of Expansion Joint for No. 000,000 Bar at Williamsburg Bridge

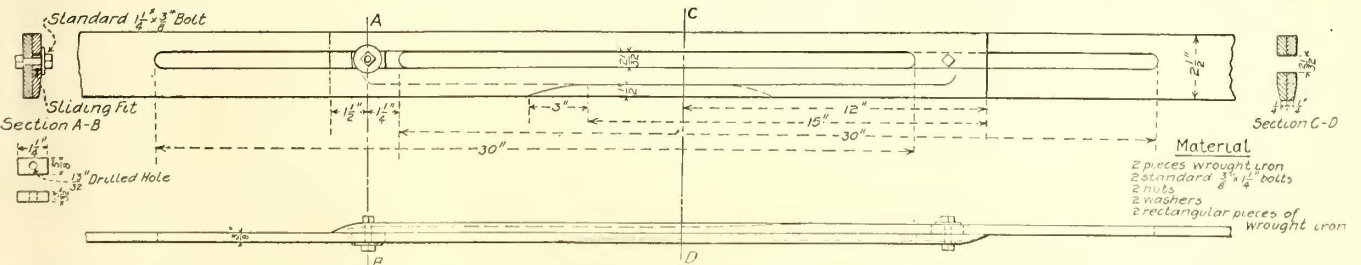
onals of the bar design last four to five times as long as those of the composition metal, and cost a great deal less.

CONSTRUCTION DETAILS.

All bars are made up in the line department's shops to standard lengths of 16 ft., and are suspended at intervals of 8 ft. One of the accompanying drawings shows the latest form of trough used with this standard bar and hanger. The hanger design permits the use of a lighter bottom-board than heretofore and avoids boring a large hole for the insulating stud, thereby producing economy both in labor and material. The standard trough bar hanger is shown in another illustration.

to supersede this design.

The standard right-hand iron-bar frog on page 1018 is designed as an entering frog, and operates properly with all types of cars, whether they have one or two poles, are single or double truck, etc. These frogs are made for standard overall lengths and can be inserted in the conductor bar by removing and replacing six rivets. It has not been thought desirable to use bolts, as the little extra time required to remove the rivets is not objectionable, because generally there is no need for removing the frogs in a hurry, and the changes can be made when it is most convenient for the crews. The rivets give better elec-



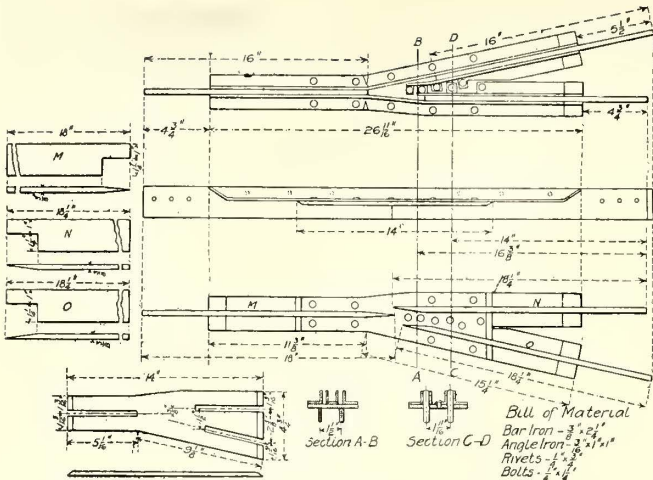
Brooklyn Line Department—Expansion Joint Used at the Williamsburg Bridge

It does not differ from the Brooklyn Rapid Transit wire hanger except for the stud.

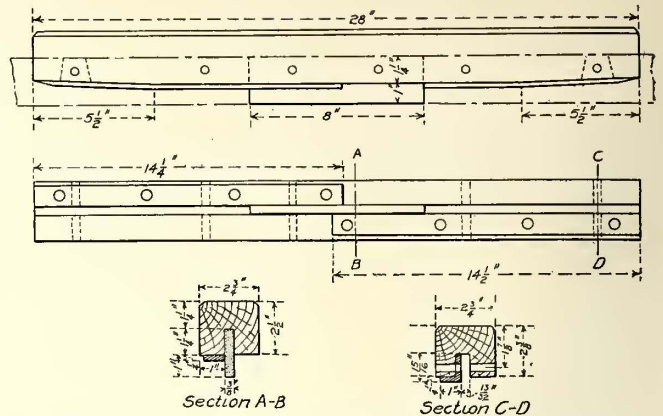
The composition iron-bar end casting for No. 00 wire illustrated is employed to join the overhead wire to the conductor bar. The casting is riveted to the bar. Means for suspending this casting from the trough are provided by a slotted hole

trical contact than bolts, and none of them has ever been burned out in service. Another drawing, on page 1018, presents the details of a left-hand iron-bar frog which is used either for trailing alone or for trailing and entering.

The bar-iron section insulators are made with fiber centers, as indicated on the section in the accompanying drawing. These

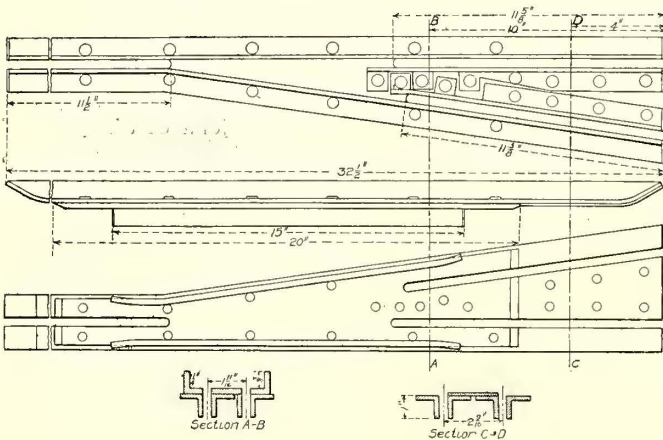


Brooklyn Line Department—Standard Iron-Bar Frog

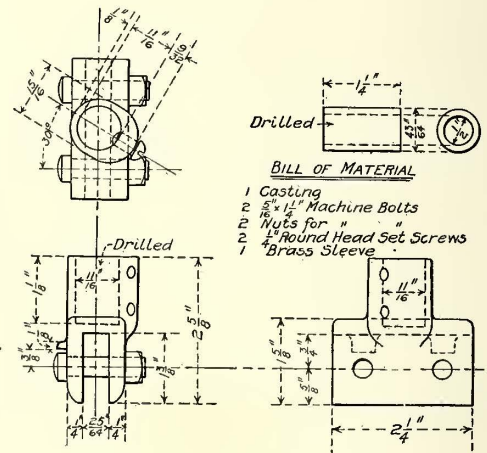


Note.—Wrought iron wearing strips to be fastened, as indicated, with 1-in. No. 10 flat-head screws, countersunk. Insulation—Hard fibre. Wood—Maple or oak.

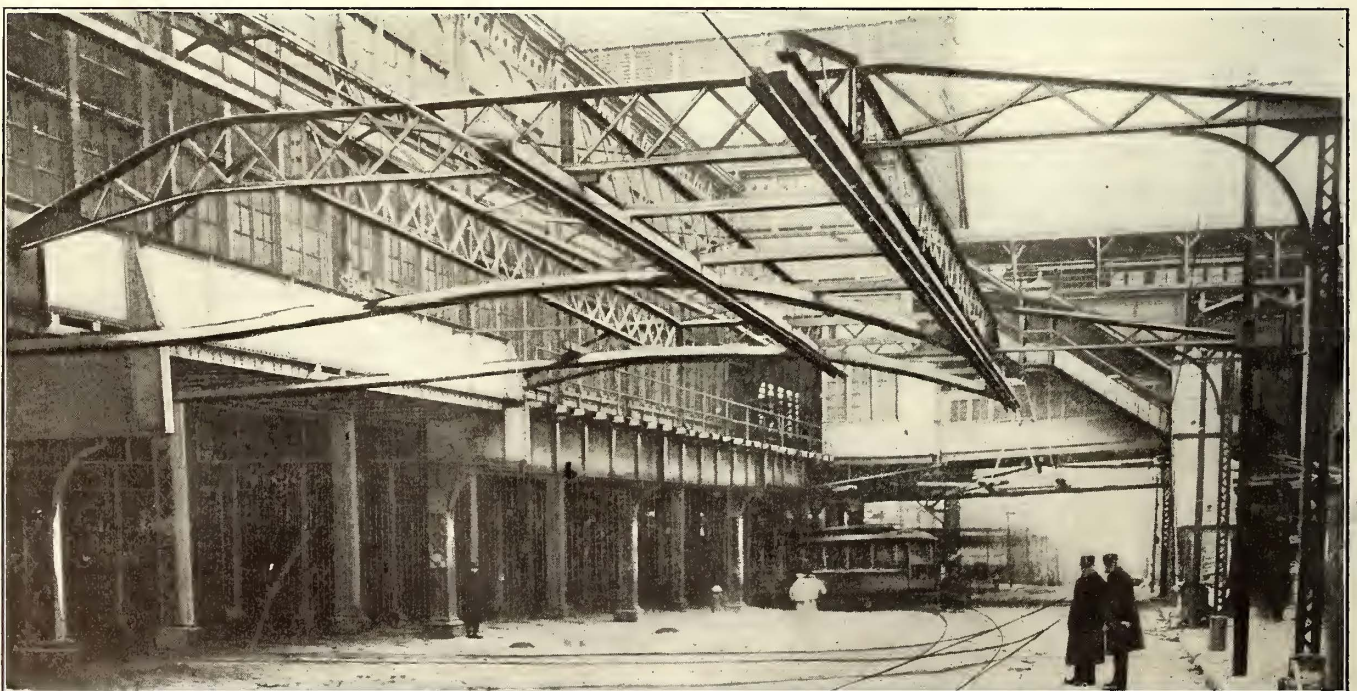
Brooklyn Line Department—Iron-Bar Section Insulator



Brooklyn Line Department—Left-Hand Iron Pan Frog



Brooklyn Line Department—Side Feed Casting for Iron Bar

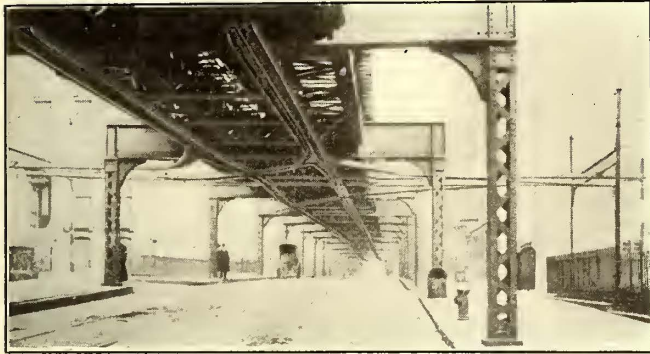


Brooklyn Line Department—Iron-Bar Construction Alongside the Brooklyn Bridge

devices have given a life exceeding 10 months over the most heavily traveled tracks in Brooklyn. At street intersections it is the practice to put bar section insulators into the trough work to avoid having insulated crossings or section breakers in the trolley wire. The bar method gives a more durable and reliable means of insulating the intersecting lines.

The principle of the bar section insulator construction has

and forth at frequent intervals. The installation at Concord and Adams streets illustrates an instance where the troughs are carried from light lattice girders with ornamental brackets. All of the construction is painted a dark green to make it less conspicuous. The view taken at Fifteenth Street and Fifth Avenue is an unusual case, as here the trough was omitted in part to satisfy



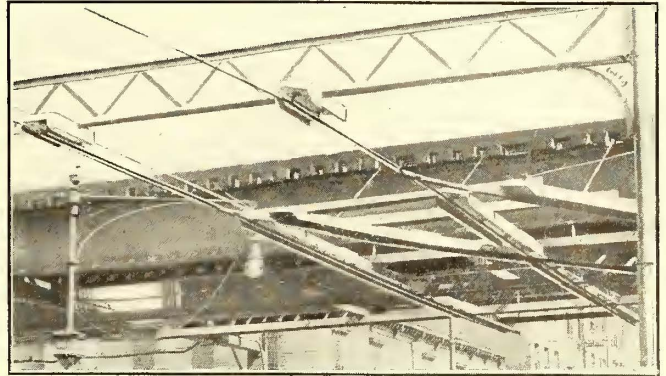
Brooklyn Line Department—Iron-Bar Work at Concord and Adams Streets

been applied to the circuit-breakers of the electric automatic track switches operated by the company. These circuit-breakers have been found to last longer than the original designs furnished by the track switch manufacturers.

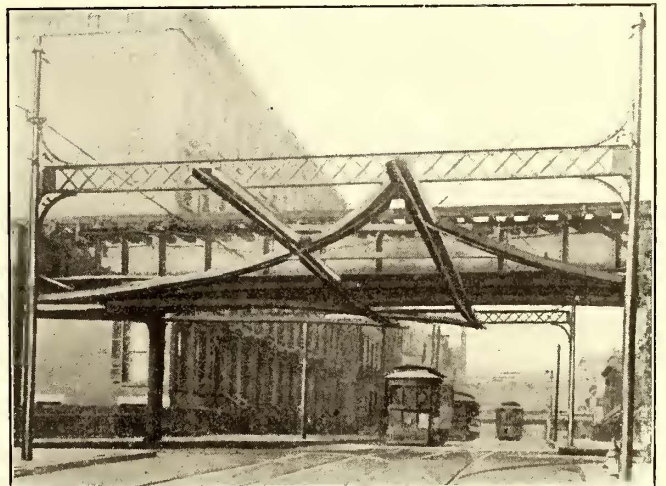
Side-feed taps are made into the conductor bar by means of the brass casting shown in one of the detail drawings. This brass casting has two bolts for the connection to the bar. It is drilled in the upper part to receive a sleeve, into which the copper feed wire is wedged and soldered and then held in place by the set screws in the brass casting.

TYPICAL INSTALLATIONS

Several interesting views are presented in the accompanying



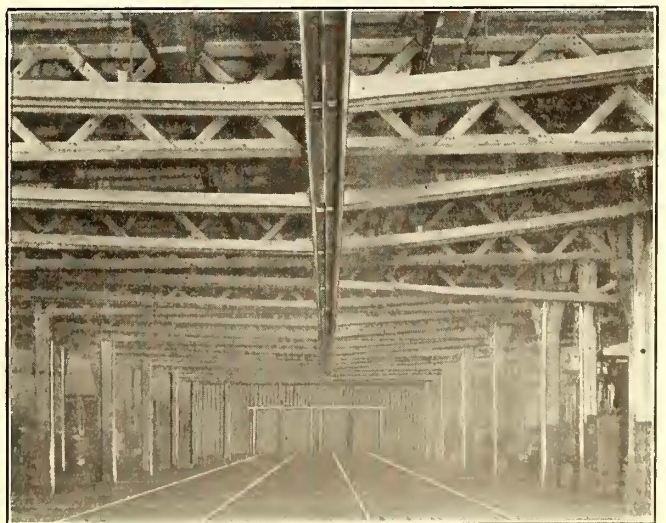
Brooklyn Line Department—Bar-Iron, T-Bar and Wire Overhead Circuit at Fifteenth Street and Fifth Avenue



Brooklyn Line Department—Iron-Bars and Troughs at Concord and Adams Streets



Brooklyn Line Department—Iron-Bar Construction on Brooklyn Bridge Surface Car Incline



Brooklyn Line Department—Bar-Iron Conductor Troughs in Greenpoint Car House

illustrations to show some of the diverse conditions under which the conductor bars have been installed. The single interior view presents the bar-iron overhead work over the transfer table in the Crosstown depot, where cars are shifted back

an adjacent property owner. A T-bar was substituted to bridge the gap, but otherwise the construction is practically the same as elsewhere. The T-section is connected to the standard bar by miniature railway fishplates.





of these divisions in the Philadelphia Rapid Transit Company's accounts:

|  |      |
|--|------|
| <b>PERCENTAGE OF TOTAL OPERATING COST EXCLUSIVE OF MAINTENANCE</b> |      |
| Fuel .....   | 71.8 |
| Employees .....  | 20.0 |
| Water .....  | 1.2  |
| Lubricants for power houses.....                                   | 1.4  |
| Misc. power house supplies and expenses....                        | 5.6  |
| <b>100.0</b>   |      |

**TIME CARD**

In connection with this subject, it might be of interest to reproduce the time card used by the motive power department. This card was especially devised to record the work on different jobs throughout the day and week. When used for floating gangs, the card is kept by a time-keeper who makes separate entries in the upper part of the card and afterwards summarizes the work for each station, the account numbers and cost at the bottom of the card. When the men are working at some distant point not conveniently reached by the time-keeper, the latter telephones to the local engineer in charge for the neces-

| <b>MOTIVE POWER DEPARTMENT ACCOUNTS.</b> |   |
|--|---|
| ACCOUNT No.                              | 3 TURBINE REPAIRS                         |
| " "                                      | 4 PUMP REPAIRS                            |
| " "                                      | 5 ENGINE REPAIRS                          |
| " "                                      | 6 PIPE REPAIRS                            |
| " "                                      | 7 BOILER CLEANING                         |
| " "                                      | 8 BOILER SETTING                          |
| " "                                      | 9 BOILER REPAIRS                          |
| " "                                      | 10 ECONOMIZER AND HEATER REPAIRS          |
| " "                                      | 11 OPERATING LABOR—ENGINE ROOM            |
| " "                                      | 12 " " BOILER ROOM                        |
| " "                                      | 13 " " SUB STATIONS                       |
| " "                                      | 16 MISCELLANEOUS REPAIRS                  |
| " "                                      | 17 ASH AND COAL ELEVATOR REPAIRS          |
| " "                                      | 18 CONDENSING SYSTEM REPAIRS              |
| " "                                      | 19 ASHES                                  |
| " "                                      | 20 COAL                                   |
| " "                                      | 22 STEAM PLANT BETTERMENT                 |
| " "                                      | 23 ELECTRIC PLANT BETTERMENT              |
| " "                                      | 24A DYNAMO REPAIRS                        |
| " "                                      | 24B OTHER ELECTRIC REPAIRS                |
| " "                                      | 26 GENERAL MISCELLANEOUS                  |
|  |   |
|  |   |
|  |   |
|  |   |
| <b>OTHER DEPARTMENT ACCOUNTS.</b>        |   |
| ACCOUNT No.                              | 101. ACCRUED MAINTENANCE OF WAY AND BLDS. |
| " "                                      | 102. HEAT AND LIGHT                       |
| " "                                      | 103. WILLOW GROVE PARK                    |
| " "                                      | 104. TRANSPORTATION MISCEL.               |
|  |   |
|  |   |
|  |   |

Back of Philadelphia Time Card, with Account Numbers

sary information. It will be observed that the back of the card lists the motive power department accounts to guide the time-keepers and others in assigning the proper distribution charges. This card also serves to cover the time of men who do the same work day after day at a given station, but in this case it is made out by the engineer in charge or by his clerk. Formerly the names, rates and work of the men were copied in a time book and re-written on distribution sheets; this involved making eight entries a week. The time card method requires only one entry of each item and so saves time and errors of transcription. At the end of the week the card is transmitted to the auditing department for making up the pay-roll. The cards are filed by the auditing department in separate envelopes for easy reference in case of disputes.

Those who make out these cards are furnished with the following notes to insure uniformity:

"A" Overtime for which time and half time is paid must not be reported on these cards, but must be reported on overtime vouchers.

"B" Overtime will be inserted in the main office on right hand side under summary.

"C" Under summary (left hand side), insert the total charge for each account and each station as shown by daily time distribution above.

"D" All pay-rolls end at midnight of the 7th, 14th, 21st and last day of the month, except for eight-hour shifts ending at 11 p. m., in which case the pay-roll ends at 11 p. m.

"E" All time must be reported for the calendar day on which the shift ends.

"F" Men are not permitted to work each other's shift without being credited with the time worked.

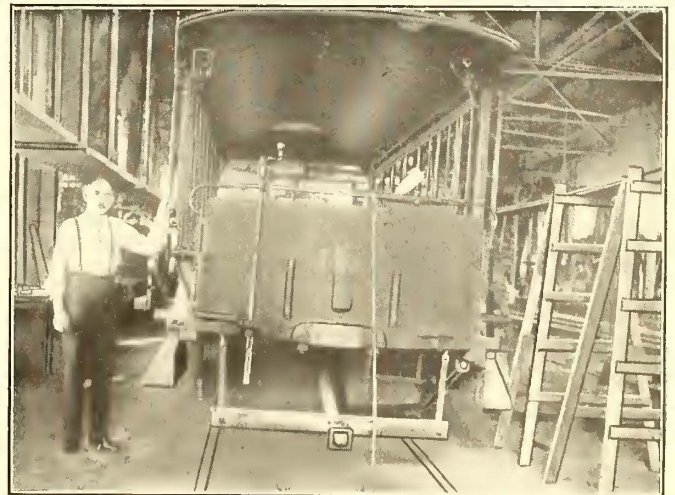
"G" No time less than one-half hour will be considered. Fifteen minutes or more must be worked to be credited with one-half hour.

**STATION COMPARISON**

Another interesting practice of the motive department is to prepare a monthly digest of the operating results of the separate power houses showing the number of kw-hours produced, the cost per kw-hour, coal, water and steam consumption, etc. A copy of this report is sent to every station with explanatory notes as to any extraordinary cause which affected the record of the station, such as defective water meters, variations in coal, etc. The station records are based on the output available for power, a suitable deduction being made for the power used by the auxiliaries. The same form also gives a record of the substation work. It has been found that the practice of acquainting all interested parties with these reports has produced a very desirable spirit of emulation among the engineers and operators.

**PAINTER'S SCAFFOLD IN THE SHOPS OF THE MOBILE LIGHT & RAILROAD COMPANY**

The accompanying illustration contrasts very effectively two ways of getting at the sides and roof of a car to carry on painting. The left side of the picture shows how the roof and upper part of the car can be painted from a strap-iron and board scaffold carried from the roof trusses without interfering with



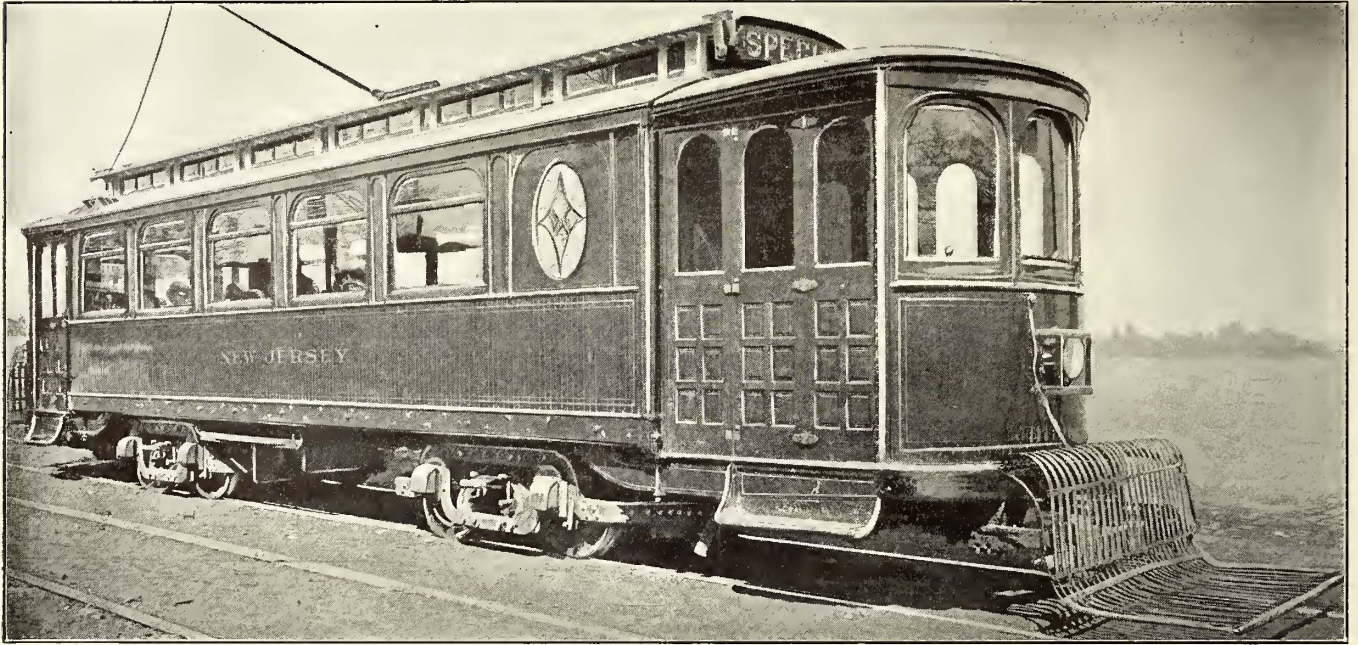
Suspended Scaffold as Compared with Aisle Horses for Car Painting

the free movement of anybody along the side of the car. The right side of the picture shows the blockaded condition of the aisle where the ordinary horses are in use. It is apparent that the swinging scaffold is far preferable whenever there is enough headroom to permit its installation. The view shown was taken in the shops of the Mobile Light & Railroad Company, of which S. M. Coffin is master mechanic.

## MANAGER'S INSPECTION CAR OF THE PUBLIC SERVICE RAILWAY

The Public Service Railway Company of New Jersey operates over 675 miles of electric railways measured as single track and of this total 550 miles are of standard gage. This vast network covers more than one-half of New Jersey and supplies transportation to some 150 municipalities with a com-

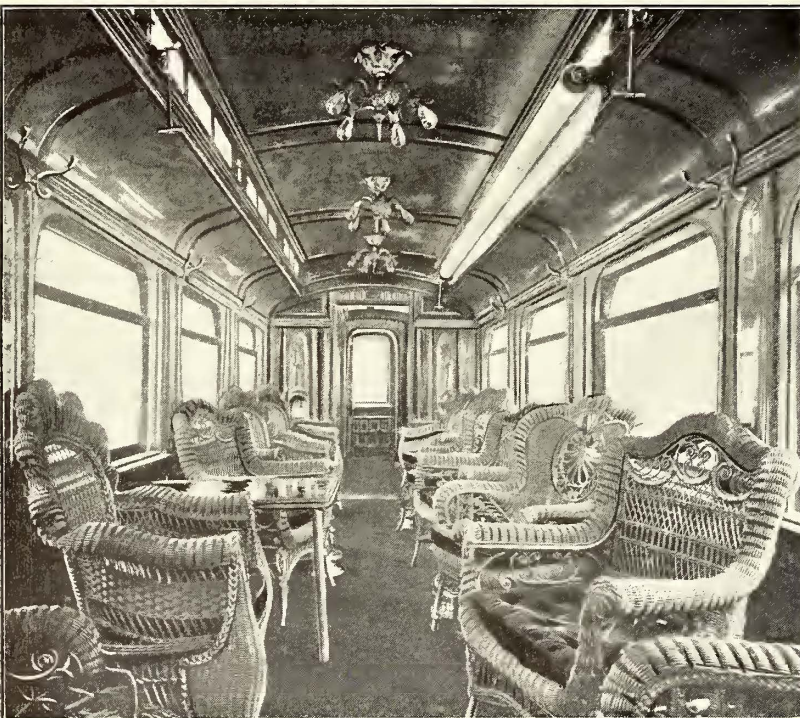
in Newark whence only a comparatively small portion of the company's territory can be quickly reached either by steam or electric cars. To be sure, the automobile offers a quick means for getting about from one place to another, but in the desire to make speed the user is tempted to operate over the best roads and thus neglect the very routes where the track conditions may be worst. The only way to learn the state of the line and track is actually to ride over the rails.



Manager's Car—General View of Office Car Built by the Public Service Railway Company, New Jersey

bined population of 1,500,000 or about five-sixths of the total number of inhabitants. The traction lines are of the most diverse character ranging from complex city systems like

for then every important defect will make itself felt with significant unpleasantness to those who are in the car. Another important point is that when a special car is used, it is prac-



Manager's Car—Views of the Observation Compartment and the Culinary Equipment

those in Newark and Jersey City to single track light interurbans in remote, sparsely settled territory. At first glance, it would seem impossible for the general manager to keep in personal touch with the physical conditions of so large a railway property, particularly as the executive headquarters are

ticable to carry a cooking equipment so that the car may proceed without regard to the meal times of wayside hotels. These considerations led the Public Service Railway Company to equip a novel office and inspection car which would enable the general manager and his aides to travel at will over any

part of the standard gage lines, take along or pick up unfinished business and answer correspondence en route. Furthermore, the general manager can arrange to have the division superintendents and engineers board the car at specified points. In this way, the subordinates save much of the time which would be lost if they traveled to headquarters. On the other hand, the general manager is also placed at an advantage because he can confer with his men while traveling over the routes under discussion.

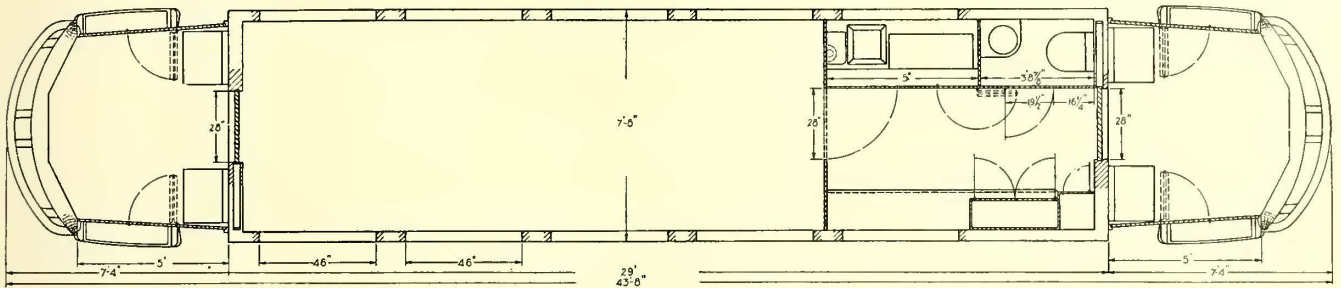
DETAILS OF INSPECTION CAR

The general appearance and arrangement of the Public Service Railway Company's inspection car are shown in the accompanying half-tones and drawings. The car body is 7 ft. 8 in. wide over the sides, 29 ft. long over the corner posts and

to observe the road without leaving the interior. In addition, each of the platforms is also furnished with a pair of seats for direct observation of the track.

The cook's quarters are separated from the office section by a swinging door. When the kitchen is not in use, this door is hooked back to form a partition for the sink and water tank, thereby leaving a clear aisle to the rear platform. The kitchen facilities comprise a buffet range, a denatured alcohol stove, fuel and water tanks, cooking utensils, dishes, dish closets, etc. The toilet room, with wash basin and nickel plumbing, is in the same part of the car and is completely enclosed, as shown on the plan.

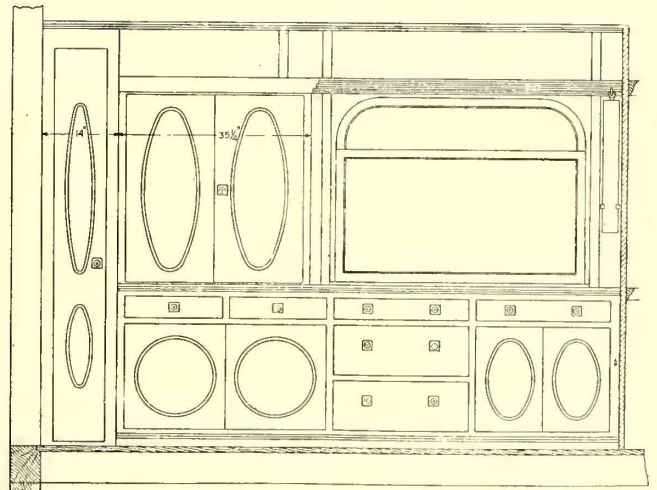
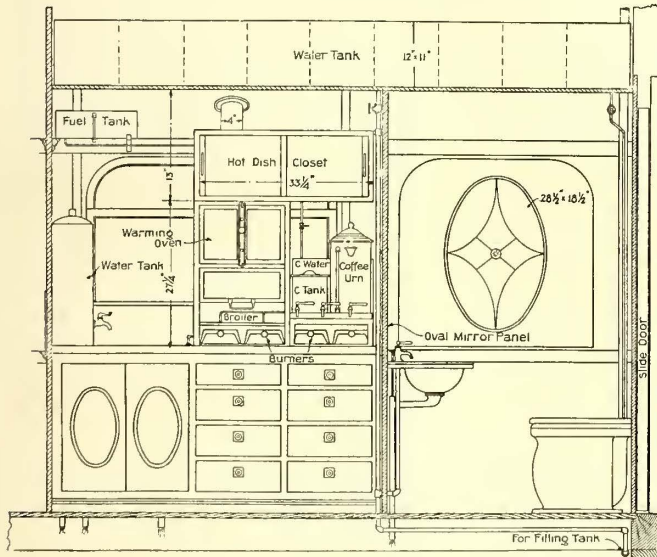
The car is mounted on two Standard trucks, carrying four No. 101-C Westinghouse motors. Other details of the equip-



Manager's Car—General Plan

43 ft. 8 in. long over the bumpers and the vestibuled platforms. It is constructed of wood throughout with the exception of a steel plate placed over the side sills. The platform knees are of steel with wood fillers. To distinguish this car from the regular rolling stock, which is painted yellow, the body color is maroon with a simple gold striping; the trucks

ment include K-6 controllers, G. E. compressors, National Air Brake Company's engineers' valves, Providence fenders and Consolidated electric heaters. The compressor is hung between the trucks opposite a box which contains the jacks and other tools required for a complete emergency outfit. The resistances are carried under the rear platform. The car is



Manager's Car—Elevation of Cuisine and Toilet Sections

are painted green and are also striped with gold, giving the entire coach a handsome, dignified appearance.

The interior of the car is divided into two compartments, about two thirds of the body being devoted to a general office for the manager and his assistants and the remainder to the cuisine. The office compartment is furnished with "Brussels" carpet, comfortable wicker chairs and several hinged tables which are equally serviceable for writing or eating. Mirrors, clothing hooks and push-buttons are also installed in this compartment. It will be observed from the view of the interior that a roll map is carried from the monitor. This map is of linen 10 ft. 6 in. wide by 7 ft. long and shows every portion of the company's property on a scale of 2000 ft. to the inch. The windows in the office compartment are very wide and as the front doors are almost entirely of glass, it is easy

brilliantly lighted by 16-cp lamps, distributed as follows: Four five-lamp ornamental clusters in the office compartment; one five-lamp cluster in the kitchen aisle, and a three-lamp cluster on each platform. The headlight at each end is also provided with a 16-cp incandescent lamp. The car was rebuilt and equipped in the Plank Road shops of the Public Service Railway.

The report of delays to passenger trains in New York State during March, 1910, just issued by the Public Service Commission, Second District, shows that during that month 60,202 passenger trains were run. Of these 85 per cent were on time at division terminals. The average delay for each late train was 29.6 minutes; the average delay for each train run was 4.4 minutes.

## PACIFIC CLAIM AGENTS' ASSOCIATION

The Pacific Claim Agents' Association held its annual convention in San Francisco, May 20 and 21, the sessions being held in an assembly room in the Pacific Building. This was the first convention to be held since the organization of the association a year ago at Portland, Ore., and while the attendance was not quite so large as then, the meeting was a very successful one and all in attendance agreed that it was most interesting and helpful.

### PRESIDENT'S ADDRESS

The convention was called to order Friday morning, May 20, by President B. F. Boynton, claim agent of the Portland Railway, Light & Power Company, who may be considered the founder of the association. In a short welcoming address President Boynton said it gave him great pleasure to state that one of the first practical results of the formation of their body had been the breaking up of a gang of accident fakers. There had been several cases where witnesses had been located, claims settled and information obtained by the companies from one another because they were all members of one association. As time went on, all of the companies were becoming more and more aware of the importance of the claim department, realizing that through the proper organization and equipment of the latter, their dividends would be largely increased. The president announced also that E. C. Carpenter, president of the American Street & Interurban Railway Claim Agents' Association had extended to the Western body a cordial invitation to meet with the national association at the next convention in Atlantic City.

### REPORT OF EXECUTIVE COMMITTEE

The report of the executive committee was presented by the secretary, the principal matter of record being an account of a meeting of the committee in Seattle, Aug. 28, 1909. Ida P. Newell, of the claim department of the Portland Railway, Light & Power Company, secretary-treasurer of the association, then made her report. The work of the association for the year past was reviewed, mention being made of some six or eight accident fakers, concerning whom information was communicated to the different members. Principal among them was a woman who operated successfully in 15 different cities, being finally discovered in Oakland, and although apprehended and acquitted by a sympathetic jury in Spokane, was finally convicted in Vancouver and is now serving an indeterminate sentence. The secretary had also circulated information concerning witnesses which had been valuable.

### INVESTIGATING ACCIDENT REPORTS

A paper entitled "Investigating (a) an Accident Report (b) a Claim," was presented by J. H. Handlon, claim agent for the United Railroads of San Francisco. Mr. Handlon's paper was published on page 905 of the *ELECTRIC RAILWAY JOURNAL* of May 21 under the title of "Investigating Accident Reports and Claims."

### RELATIONSHIP BETWEEN CLAIM AND TRANSPORTATION DEPARTMENTS

John Ferrin, claim adjuster for the San Francisco, Oakland & San José Consolidated Railway and the Oakland Traction Company, submitted a paper entitled "Relationship Between Claim Department and Superintendent of Transportation." Mr. Ferrin pointed out that no matter how carefully inspection is done by the operating department, matters will occur on the cars of which the superintendent of transportation is ignorant. The information which the superintendent needs to correct these errors can be found only with the head of the claim department. There should be daily conferences between the heads of the claim and transportation departments at which all the defects brought to light by the former can be explained and corrected. The value of information gathered by the claim department is apparent from the consideration that it was not received simply from employees of the company, but also from disinterested outside parties.

### COMPANY PHYSICIANS

Mr. Ferrin also contributed a brief paper entitled "Should a Railway Company Have Its Own Physician?" It has been

the policy of his companies not to have a staff physician, so when an accident occurs, the injured person is at liberty to select any physician desired. He has found that physicians, as a rule, are reputable and high-minded men, and has experienced no difficulty in arriving at the truth with regard to the extent of the injuries of accident victims in their care. It could not tend to good feeling between the physicians and the railroad for the former to find their patients being treated by a railroad doctor. Again, if the facts in connection with an injury became the subject of litigation, the testimony of an unbiased family physician carries much more weight than that of a medical man who is in the employ of the railroad.

### RELATIONSHIP BETWEEN CLAIM AND LAW DEPARTMENTS

On Friday afternoon, the first paper presented was one by A. J. Falkner, attorney for the Seattle Electric Company, entitled "What Should be the Relationship Between the Claim and Law Departments." In Mr. Falkner's absence this paper was read by George Carson, claim agent of the same company. Mr. Falkner pointed out that the law department is the shield of the claim department. The latter should call upon the law department for advice and suggestions regarding the defense of claims in suit at the earliest possible moment. By conference with the attorney, the claim agent is enabled to view the situation from the trial standpoint. The attorney knows from experience the effect upon juries of certain lines of testimony. He also knows that the defendant in a personal injury suit is legally entitled to recovery upon preponderance of the testimony on a disputed fact, yet from a practical standpoint, he knows it must be necessary ordinarily to overwhelm the opponent in order to win the verdict. All evidence available is never too much so that every avenue for obtaining, locating and identifying competent testimony should be exhausted at the earliest possible moment. It is not expected, of course, that the trial attorney should be substituted for the claim agent or the investigators, but it is advisable for the attorney to get in touch with the claim prior to the suit and carefully to check up the work that is being done to prepare the claim for trial. It is also important and necessary that the claim agent not only should consult with the trial attorney to do the preliminary work for the trial, but he also should be in constant communication with the attorney with reference to the liability, if any, and the amount to be paid in case of settlement. In all cases involving cases of liability or where claims are rejected because of excessive demands, it is important that the claim agent should consult with the attorney whose special business it is to know whether the company is liable or not upon the facts. The attorney can weigh the recorded statements out of court and consider them from the average jury's standpoint. It is unfair to ask the trial attorney to attend a suit that should have been settled or one that could have been defeated if proper investigation had been made under his direction. It, therefore, goes without argument that from the beginning of an accident, the relation between the law and claim departments should be most intimate, continual and confidential. The determination of when the claim department should call on the law department to defend rather than settle a claim is one that ought to be left largely to the law department. There should be no promiscuous defence of suits. Primarily, those suits in which the company is right should be defended. "Thrice armed is he whose cause is just" applies at least to some extent to the defence of personal injury cases. As a rule, juries give the defendant in personal injury suits the worst of it, but it is seldom that 12 men can be got together to give a verdict for the plaintiff when the evidence shows that the defendant is clearly right. If a claim that should have been settled is contested, the trial attorney is most likely to lose. The effect of this is to discourage the law department and to weaken the claim department in the making of other just settlements. To attain victory, there must be mutual confidence—the attorney's faith in the tact and industry of the claim agent and the claim agent's faith in the ability and courage of the attorney. Both must have the common purpose of a fair settlement of just claims and defeat of excessive demands. They cannot or ought not to be separated as they are

part and parcel of a properly organized effort to protect their common employer.

TREATMENT OF "BLIND" CASES

E. H. Odell, claim agent for the Tacoma Railway & Power Company, then read a paper on how to handle blind cases. Mr. Odell wittily compared a blind suit to blind staggers in a horse in the phraseology of the veterinary. One of the good points brought out by Mr. Odell was that the claim agent should endeavor to be on as good terms as possible with the medical men and hospital attendants in his city. Mr. Odell's paper was read by T. G. Newman, attorney for the Whatcom County Railway & Light Company.

ORGANIZATION OF CLAIM DEPARTMENT

Following this, T. A. Cole, claim agent of the Los Angeles Railway Company, read a paper on the organization of a claim department. The last paper was one by H. K. Relf, claim agent of the Spokane, Portland & Seattle Railway Company and the Astoria & Columbia River Railroad Company, and was entitled "The Best Method of Obtaining Additional Witnesses." In Mr. Relf's absence this paper was read by Walter L. Heaton, of the Los Angeles-Pacific Railway Company. Mr. Relf said that much of the trouble of obtaining additional witnesses could be avoided if the employees who make the original reports realized the importance of furnishing the name and address of each person who may have any knowledge of the circumstances of the accident. Too often the employees consider their duty done in reporting the mere facts of the occurrence and the names of the employees present. Disinterested persons are the ones upon whom most dependence must be placed to prove the case to a jury, but generally the reports are made without giving the names and addresses of such persons. It then devolves upon the claim agent to find them. This is sometimes impossible because the employee in charge of the car failed to perform this important duty. It may become necessary for the investigator to make a full canvass of all the persons living or doing business in the vicinity of the point of accident. Often police officers and other municipal employees can be of great assistance in helping to obtain additional witnesses. The claim agent should cultivate a large circle of acquaintances as he can never know when one of his friends may be able to help him with the name of a valuable accident witness. The minds of the jurors will be favorably influenced toward the defendant if, in a dispute between its employees and witnesses for the plaintiff, a reliable person can be produced to corroborate the statement of the employees. Too often the inexperienced claim agent is set on developing his side of the case and pays little or no attention to what the claimant may be able to show. This often proves to be a grave error. It should be avoided by mentioning and refuting all that the claimant could bring forward to make his case.

DISCUSSION ON PREVENTION OF ACCIDENTS

A lively discussion was held on all the papers, and in addition to the subjects mentioned other topics were brought up for discussion, among them being safety rules and appliances and other means for the prevention of accidents, physical examination of out-of-town claimants, etc. A membership committee was appointed to solicit new members as follows: Messrs. Bishop, Handlon, Newman and Beck. To select subjects for the next annual convention the following committee was chosen: Messrs. Ferrin, Heaton, Carson and Ross. It was decided to exchange printed forms between members for their mutual benefit.

ELECTION OF OFFICERS

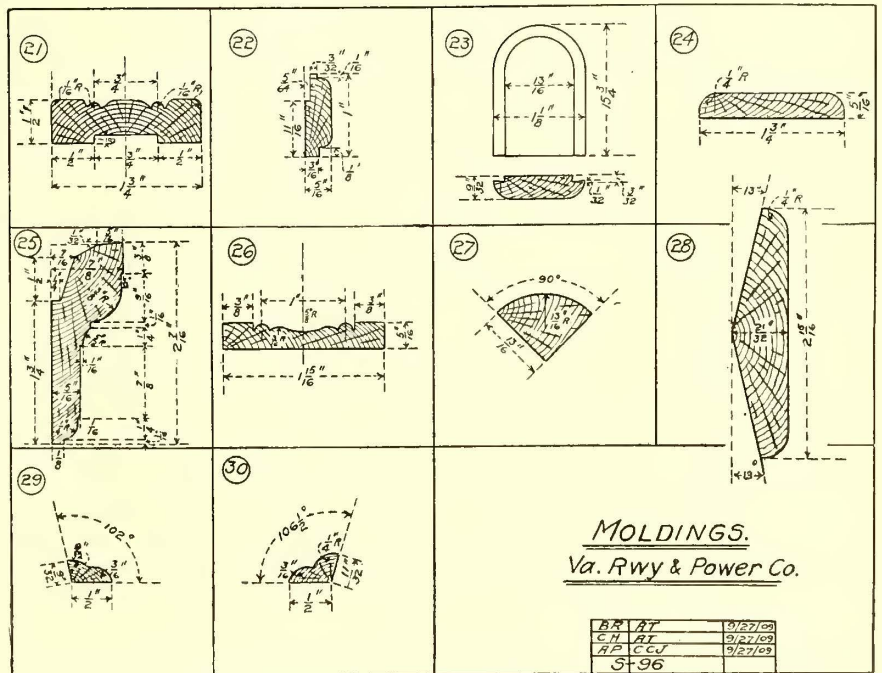
The election of officers for the ensuing year resulted as follows, most of the officials being re-elected: President, B. F.

Boynton, Portland Railway, Light & Power Company; first vice-president, A. M. Lee, district claim agent, Northern Pacific Railway Company, Seattle; second vice-president, John Ferrin, Oakland Traction Company; third vice-president, Thomas A. Cole, Los Angeles Railway Company; secretary-treasurer, Ida P. Newell, Portland Railway, Light & Power Company; executive committee, president and Samuel Bishop, Pacific Electric Railway Company, Los Angeles; J. H. Handlon, United Railways of San Francisco; T. G. Newman, Whatcom County Railway & Light Company; A. E. Beck, British Columbia Electric Railway, Ltd., Vancouver, B. C.; George Carson, Seattle Electric Company, Seattle, Wash.; H. L. Bleeker, secretary, Washington Water-Power Company, Spokane, Wash. After deciding to hold the next convention in Seattle in May, 1911, the convention adjourned.

President Boynton expressed the sentiments of the delegates in stating that the convention had been a very helpful one and that there was a real need on the Pacific Coast for the association. The members are all loyal to the national association, but perhaps only one or two can attend its convention, and the local coast association supplies the need for mutual exchange of ideas and acquaintanceship which results in direct benefit to the work of all the members.

STANDARD SIZES IN SHOP DRAWINGS USED IN RICHMOND, VA.

Standardization in drawings may not be as profitable as in apparatus, but it is both economical and convenient to confine practically all shop prints to two sizes, one for details and the other for assembling. This is done by the Virginia Railway & Power Company, which uses sheets 9 in. x 14 in. and 14 in. x 22 in. in size. The extent to which this company records its standards for the education of the employees may be judged



Standard Richmond Shop Print for Car Moldings

from the fact that even car-molding drawings are made and indicated by style numbers. This practice not only helps the mill-room, but eliminates all confusion in the ordering of supplies, because the storekeeper is not left in doubt as to what is wanted.

Twin City Rapid Transit Company, Minneapolis, Minn., has just completed a portable concrete-mixing plant. This outfit includes a Chicago concrete mixer with independent electric drive mounted on a flat car.

## MEETING OF THE COMMITTEE ON STANDARDS

The committee on standards of the Engineering Association held a meeting at the offices of the American Street & Interurban Railway Association in New York on June 3, at which the several subjects referred to this committee at the Denver convention were considered. Those in attendance were: H. H. Adams, Metropolitan Street Railway, New York; John W. Corning, Boston Elevated Railway; John Lindall, Boston Elevated Railway; G. W. Palmer, Jr., Boston & Northern Street Railway, Boston, Mass.; W. S. Murray, New York, New Haven & Hartford Railroad, New Haven, Conn.; J. H. Hanna, Capital Traction Company, Washington, D. C.; James Heywood, Philadelphia Rapid Transit Company, and W. S. Twining, Philadelphia Rapid Transit Company.

The recommendation of the committee on power distribution that the association adopt as standard for No. 0000 grooved trolley wire the section shown on page 355 of the 1909 *Proceedings* was the first subject considered. Mr. Heywood explained that the section shown was standard with manufacturers of trolley wire and was in general use. Mr. Murray said his company had been using this section and had found it entirely satisfactory. He did not believe it could be improved upon. On motion it was decided that it was the sense of the committee on standards that this section should be recommended to the association for adoption as standard with the suggestion that the committee on power distribution consider the question of standard sections for other sizes of grooved trolley wire, with special reference to preserving one contour for the groove in all sections so as to permit the use of only one pattern of clip or hanger. The recommendation that the table of copper-wire dimensions and properties included as Appendix H of the report of last year's committee on power distribution was then considered. Mr. Corning volunteered to check the figures in the table, and with this understanding the committee on standards voted to recommend to the association the adoption as standard of this table, and the adoption as recommended practice of the method outlined by the committee on power distribution for ordering large cables by the number of standard wires of a given diameter which should be used in making up the cable. It was voted to recommend that the committee on power distribution be instructed by the executive committee to consider next year the compilation of a table of stranding for large cables and also to define a cable and a strand.

The rail sections recommended by the committee on way matters last year for adoption as standard were next taken up. The T-rail section for shallow pavement and open track, weighing not less than 80 lb. per yard, was approved and recommended to the association for adoption as recommended practice. The light and heavy high T-rail sections were approved and recommended to the association for adoption as recommended practice. There was some discussion as to the possibility of using these sections in paved streets with wide-tread wheels owing to the liability of breaking up the pavement on the outside of the rails if it projected slightly above the head of the rail. For this reason the committee on standards voted to recommend that the committee on way matters be instructed to consider the design of a wide-head high T-rail for use in paved streets over which interurban cars with wide-tread wheels could be run. The sections of girder rail which were first presented in 1907 and were recommended by the committee on way matters last year for adoption as standard were approved with the recommendation that they be adopted by the association as recommended practice.

The specifications for wrought-iron bars, including sizes and limit gages, presented last year by the committee on standards, were referred back to the committee on equipment with the recommendation that they be considered in connection with the specifications for Grade A wrought iron adopted Aug. 12, 1901, by the American Society for Testing Materials.

The sizes of rolled steel wheels recommended for adoption as standard by the committee on equipment in 1909 were dis-

cussed in connection with a request from one of the manufacturers that the committee on standards consider the advisability of changing some dimensions of the proposed standard wheels. The changes advocated consisted principally in reducing the thickness of rim in some of the smaller sizes from 3 in. to 2½ in. Mr. Twining pointed out that it was questionable whether it was economical to buy wheels with thick rims capable of giving a large mileage, but weighing 30 lb. or 40 lb. more than wheels with thinner rims. It cost from 4 cents to 7 cents per pound per year to carry this extra weight around and few companies could allow a variation in diameter of wheels of more than 3 in. owing to height of steps and motor clearances. On motion, the subject, together with the manufacturer's request, was referred back to the executive committee with the request that the members of that committee take a letter ballot on the advisability of referring the entire subject immediately to the committee on equipment with instructions to report at the coming meeting of the association in October.

The specifications for steel axles presented last year by the committee on standards were discussed, and a motion carried that it was the sense of the committee on standards that these specifications should be adopted by the association as recommended practice for specifications covering untreated steel axles. Specifications for heat-treated axles are now in the hands of the committee on heavy electric traction for consideration.

## MEETING OF THE COMMITTEE ON EQUIPMENT

A meeting of the committee on equipment of the American Street & Interurban Railway Engineering Association was held at the New York office of the association on June 2. The committee members present were: John Lindall, chairman, superintendent of rolling stock and shops, Boston Elevated Railway Company, Boston, Mass.; H. A. Benedict, chief and electrical engineer, United Traction Company, Albany, N. Y.; M. V. Ayres, electrical engineer, Boston & Worcester Street Railway Company, South Framingham, Mass.; A. T. Clark, superintendent of shops, United Railways & Electric Company, Baltimore, Md. There were also present John W. Corning, electrical engineer, Boston Elevated Railway, and secretary of the Engineering Association; J. L. Davis, of the Westinghouse Electric & Manufacturing Company, and N. W. Storer, of the Westinghouse Electric & Manufacturing Company. Chairman Lindall announced that at the last meeting Terrance Scullin, master mechanic of the Cleveland Railway Company, had been assigned to report on standard gage for mounting wheels and also gage for limiting wear of flanges; R. C. Taylor, superintendent of motive power, Indiana Union Traction Company, on gears and pinions, their material treatment, limits of wear and gear ratio; Mr. Benedict on rolled steel wheels of light design as compared with heavy wheels giving longer life; Mr. Clark on two-motor versus four-motor equipments. No reports were received from Messrs. Scullin and Taylor, nor were they present at the meeting.

### TWO-MOTOR VERSUS FOUR-MOTOR EQUIPMENTS

Mr. Clark said that he was not ready to submit a report on two-motor versus four-motor equipments because he had not yet succeeded in collecting all the necessary data. What he had gathered so far tended to show that, while the choice of a certain kind of equipment often depended on the local conditions, yet there was evidence that some companies were using one or the other kind of equipment simply because they were following precedents.

Mr. Lindall said that in his experience it was much better to use two-motor equipments if one could get the necessary horsepower with them. There was less equipment to handle, the control was simpler and there were fewer defects to look after. Some engineers had taken the ground that with four-motor equipments there was less likelihood of a car being completely disabled on the street. Nevertheless for the past two years he

had had in service 100 cars with four-motor equipments and 91 cars with two-motor equipments and he did not hesitate to say that the latter were giving much better satisfaction although operating under practically the same conditions. Mr. Clark said that the controlling factor in Baltimore was the number of heavy grades. This necessitated the use of four-motor equipments.

Mr. Benedict stated that while many of the two-motor equipments used by his company were operating on grades exceeding 10 per cent, he had four-motor cars between Troy and Albany which operated on the comparatively slight grade of 4 per cent. Yet the operating department had refused to let the cars of the Hudson Valley system come into Albany because they had only two motors, it having been found that these large cars were liable to hold up the local cars when the rail was slippery. On the Hudson Valley system, which is practically all interurban, it is absolutely necessary to use four motors because speeds up to a mile a minute are required at times.

Mr. Lindall said that his company had been using two-motor equipments on 12-ton to 14-ton cars. There was considerable trouble from lack of adhesion in damp and frosty weather, but when two-motor equipments were used on cars weighing 20 tons and equipped with steel-tired wheels a great improvement in adhesion was secured. According to the operating department, the steel-tired wheels did not give the snowstorm trouble which there used to be with chilled-iron wheels.

Mr. Ayres said that his company was using four-motor equipments exclusively. If his company had no more than a 3 per cent grade he would be glad to try some two-motor equipments even at the present speeds, but the motor units would have to be larger than the present 75-hp size. The service comprises a great deal of city running in Boston and Worcester and only a comparatively short stretch of interurban running between those cities. The present speeds are 35 m.p.h. to 38 m.p.h. on level track at 500 volts. A speed of 40 m.p.h. has been attained with a higher voltage and on down grades the cars are sometimes operated at over 60 m.p.h. Mr. Benedict thought it a rather abnormal condition to have 200 hp on one truck, as this would give a poorly divided tractive effort. Mr. Ayres said that he would not necessarily place both motors on one truck. He had 8 per cent to 9 per cent grades and the question of traction, particularly in bad weather, was a serious one.

On an inquiry from Mr. Benedict about the Pittsburgh driving-rod scheme, Mr. Davis said that owing to the fact that some of the large motors are hung outside of the trucks, there is a tendency for the idle wheels to lift up every time the motorman applies power. The Pittsburgh Railway Company has a 62½-in. gage and for some reason it does not use a larger wheelbase than 67½ in. As the motors are very large on some of the equipments they must be hung outside.

Mr. Clark thought that Chicago represented an instance where two-motor equipments might be used, although four-motor equipments were now being employed throughout. Mr. Davis in replying said that a single two-motor equipment had been sent to Chicago, but had been taken off before it had been given an extensive trial. New York and Detroit were now using two 60-hp motor equipments with maximum gear reductions despite the fact that with these equipments there was some slipping on the rails at starting, although the trucks have steel wheels. Mr. Davis thought that the poor rail conditions in Chicago had determined the selection of four-motor equipments. Mr. Clark said that on the Baltimore cars equipped with four GE-90 motors, K-28 F controllers and standard contactors it was found that the current broke in the controller if the handle was moved too quickly.

Mr. Benedict thought that the type M equipment was too complicated for his service since there had been brought out such controllers as the K-35, which has individual blow-out coils. His cars were equipped for train operation, although they are not running in this way. The company was operating K-10 controllers with contactors for two-motor equipments and the operating department was so satisfied that it would not allow a car on the road without the contactors. Mr. Davis said that

the new electro-pneumatic line switches brought out by his company could be made to go out so fast that they would even protect a fuse.

#### ONE-WEAR STEEL WHEELS

Mr. Benedict was then called upon to report on the subject of steel wheels. He said that he was not prepared to give a complete report at this time. It was his first impression that all he would have to do would be to write to the manufacturers of steel wheels and then assemble the data secured from them for transmission to the chairman of the committee. He had also hoped to secure a number of light-rim steel wheels with which to equip a motor car for comparative power consumption and wheel wear experiments to demonstrate in a practical way whether there would be any saving in city service by using a light-rim steel wheel as against a heavy-rim steel wheel. The difference in power saving would not be merely that saved by the reduction of 100 lb. dead weight per wheel, as it should be remembered that this dead weight was carried on a 17-in. radius under acceleration and retardation. He had taken up the question of securing a light-rim wheel with different wheel companies and found only one which seemed willing to make such a wheel. This company, however, had the misfortune to lose some machinery and so the delivery of the wheels would be delayed for some three or four months. Consequently, Mr. Benedict would not be able to carry out his experiments in time for a report at the 1910 convention. It was rather strange that the other manufacturers should have said that they had no means of making a light-rim wheel, when at the last electric railway convention one of their own representatives had stated the possibility of doing so.

Following this there was a general discussion on the life of wheels. Mr. Benedict said that he had tried cast-steel wheels. They were very unreliable as regards life, one running 150,000 miles and another on the same car only 30,000 miles; one wheel would wear perfectly and another would develop soft spots. The wear on his lines was entirely on the flange—where the flange was soft it would run sharp inside of 35,000 miles. Mr. Lindall said that most of his wheel wear also was on the flanges. Mr. Benedict continued that he had not yet had a steel wheel flattened from skidding in ordinary braking operation. To be sure, the wheels would be covered with many small flats, but they would roll out in service. Up to two years ago he used steel-tired wheels almost exclusively. He found that if the wheels were let alone they might run up to 125,000 miles before the first turning, but they would not reach 50,000 miles before the second turning was needed. He hoped that the light-rim, one-wear wheel would displace the heavy-rim wheel. Under his conditions it would pay to use a one-wear wheel if it could be purchased at \$15 or less for a life of, say, 100,000 miles. He thought that the rim need not be more than 1 in. thick, as he had found that he did not get more than ½-in. tread wear in 100,000 miles. Mr. Davis said that one manufacturer had sold rolled gears with thin rims. He did not see, therefore, why thin rims could not be made on car wheels.

Referring to steel-tired wheels, Mr. Benedict said that he was scrapping the centers as fast as the tires wore out. He also hoped to eliminate all his chilled-iron wheels because of the trouble they gave from flats. The expense for steel wheels was about the same as the chilled wheels because the latter averaged only about 22,000 miles on 10-ton to 20-ton cars, mainly on account of flats and consequent grinding. At one time he had a contract with a manufacturer who furnished wheels on a 40,000-mile guarantee, the understanding being that if the wheels ran less than 25,000 miles they would be replaced without charge and if they ran between 25,000 miles and 40,000 miles the railway would pay half price. This contract, however, excluded the shortening of life due to flat spots and consequently the manufacturer did not come off badly in the bargain.

Mr. Lindall said that he was running chilled-steel wheels on 14-ton cars. The 30-in. wheels were guaranteed for 36,500 miles and the 33-in. wheels for 40,000 miles. He did not see how a steel-tired wheel could be economical in comparison

with these results. Mr. Clark said that the cast-iron wheel was most advantageous for him, except on one line. Mr. Benedict mentioning the one-wear wheel again, said that it would be of particular benefit to the small roads which were not equipped for turning wheels.

Mr. Davis brought up the question if improper brake-shoe and brake-rigging design did not affect the flange wear. Mr. Clark thought that a good deal of trouble arose from this condition, but that it could be remedied by maintaining a proper brake adjustment.

Mr. Lindall referring to his experience with chilled wheels said that his company had contracts with two makers. He had had no trouble except that there was a tendency of the wheels of one make to chip even when practically new. Mr. Clark said that a good deal of chipping occurred when the sharp flanges struck switch points.

In concluding the discussion on wheels, Chairman Lindall instructed Mr. Benedict to go ahead and secure all possible data for presentation by the committee at the next convention. Even if no practical conclusions could be given at that time there would be at least the benefit of securing the interest of the railway companies at large and of the wheel manufacturers in this important matter. By the 1911 convention it might then be possible to show some solid results.

#### CAR WEIGHTS

Mr. Lindall then announced that the subject of car weights had been taken up jointly by Mr. Ayres and himself. Mr. Ayres was to treat the car bodies, while he was to consider trucks and equipments. In pursuance with this arrangement he had written to the principal truck manufacturers on the subject of possible reduction in truck weights, considering the cost of ton weight per car to be \$100 a year. He also asked the manufacturers to express their preference for the proper weight of trucks, center-plate loading, for city, suburban and interurban service. In reply to this letter one manufacturer sent considerable car body data, which was turned over to Mr. Ayres.

There was a general discussion among those present on the possibilities for lightening trucks. Mr. Clark thought that if I-beam and channel sections were used more freely greater strength could be obtained for less weight than with the rectangular sections. Mr. Davis mentioned that pressed-steel bolsters were used on the latest Pennsylvania Railroad cars and Mr. Lindall was of the opinion that bolsters could be constructed of malleable iron instead of cast iron. Mr. Davis asked if a spring-supported motor with quill drive such as used on the New Haven electric locomotive would not lighten trucks owing to the reduction of shocks, but Mr. Clark thought that this scheme was more suitable for interurban than for city trucks.

Mr. Lindall said that he had also written to the three large manufacturers of electric railway equipments on the subject of possible decrease in the weight of motors and accessories. Data was submitted by one company.

Mr. Davis said he had never made any figures along similar lines, but there were two possibilities of decreasing the weight of motors. One proposition was that of raising the speed of the ordinary city motor from 500 r.p.m. to 650 r.p.m.

Standard equipments made for the high speed had proven too fast, as they could not be geared down enough. By using a  $3\frac{1}{2}$  instead of a 3-pitch pinion, employing high-grade material, the gear reduction could be increased and the motor speed raised. In this way a 500-r.p.m., 40-hp motor could be increased to 50 hp capacity in the same frame and even to 60 hp if operated at 750 r.p.m. It was largely a question of finding the limit of armature speed. It was a fact that the interpole winding helped out greatly on high voltage in keeping the commutator in good condition as long as the brushes stayed on the commutator, but as soon as the brushes lifted, flashing was bound to occur. Slotting the commutator did not help out so much on high peripheral armature speeds and it was better if one could get along without it, because undercutting at high speeds set up irregularities which caused brush vibration. So

far as forced ventilation was concerned, it would be better to run simply without the covers in the case of motors like 40 hp. Mr. Davis mentioned some motors which had been built for the Pacific Electric Railway. This design was built with fireproof wire, asbestos-taped field coils, impregnated armatures, etc. In the factory tests it was run at 125 deg. Cent. for one and a half months. The weak point was the difficulty of winding fireproof wire without short-circuits. There is no reason why the motor could not run at 100 deg. Cent. right along. He did not know whether such a motor would be a good thing universally, but the result in this instance had been to get 60 hp from a 40-hp frame without using interpoles. Mr. Davis added that the first interpole motors were about 3 per cent heavier than the ordinary types, but now they are designed for about the same weights per horse-power. Referring to the general question of weight reduction, he said that one could take a 40-hp motor weighing 2850 lb. and scale it down to 2450 lb. or 2500 lb. by lightening the gear case and trimming the motor generally. To do this it would be necessary to have extremely light and specially treated gears, high-grade pinions and sheet-steel gear cases. All this could be done without increasing the armature speed. Such a motor would not cost much more. There would be some extra expense for the gearing, but then the result would be to double the strength of the gear and increase the life at least  $33\frac{1}{3}$  per cent. High-grade pinions were now being used on small equipments. So far as the manufacturer was concerned it was simply a question of making something which would be universally acceptable. It was easy enough to cut down the weight in special cases. By using special material it would be possible to increase the output from the same size framing by 20 per cent by using a higher speed.

The other possibility of reducing the weight of motors was that of using field control. This would reduce the weight of resistance and the power consumption especially. The idea was in one sense a return to the theory of operation of the old W.P.-50 and GE-800 motors, but, of course, much more was known now about commutation and general design.

Mr. Ayres then submitted as an introduction to his report on car body weights an interesting essay describing the relations, positions and uses of the principal framing and supporting members of car bodies. He also submitted the drawings of a semi-steel car which, according to the manufacturer, would weigh only about 700 lb. per passenger for a car seating 50 passengers.

There was a discussion on the proper basis of comparing car weights, Mr. Storer suggesting that floor areas might be used as a logical basis. Mr. Ayres also read a copy of a letter which he had sent out to different car builders asking them to comment upon 13 principles of car construction as set down by him. As the letter had been sent out very recently he had no replies for this meeting, but hoped to have all of the answers in time for the next meeting of the committee.

#### WEAR OF STEEL TROLLEY WIRE WITH SLIDING PANTOGRAPH TROLLEY

W. S. Murray, electrical engineer, New York, New Haven & Hartford Railroad, recently made an examination of some No. 0000 grooved steel trolley wire which has been in service over the main locomotive terminal lead track in the Stamford yard for 20 months. The wire showed a reduction in thickness of the lower lobe of 14 per cent, or approximately one-seventh of the allowable wear. A total of 85,000 locomotive movements had been made under this wire, or four times the number of movements made under main track wires in the same period. At this rate of wear a steel trolley wire over main track with the present density of traffic should last 44 years. The sample of wire examined was coated with a thin layer of grease from the pantograph collector pans and soot from the steam locomotive exhaust. When this coating was removed by wiping with waste the surface of the wire was found to be bright and smooth, with no signs of corrosion.



## COMMUNICATION

### WORKERS' COMPENSATION ACTS

THE BRISBANE TRAMWAYS COMPANY, LIMITED

BRISBANE, AUSTRALIA, May 10, 1910.

To the Editors:

I notice there is an agitation by many of the American papers, especially religious papers and those like the *New York Independent*, for the enactment of workers' compensation acts, both by the Federal Government and by the different States, but in none of the industrial papers do I see anything in opposition. The English act is quoted, and all manner of wild statements made in regard to its operation. Here is an example:

"The law has proved simple and inexpensive in operation. It has given the workman just compensation. It has not cost the employers so much as liability insurance, that does not compensate the workers, now costs American employers."

I will not deny that in theory a workers' compensation act appears a good thing, although I do not think its abstract justice has been proved; but, like many other theories, the test of practical experience has shown that there are very many defects in the present acts. I, myself, have had experience of an act similar to the English act for several years, and owing to political and commercial connection with Great Britain, we here probably know a great deal better how the act operates in Great Britain than most of the people in the United States who write so glibly about it. Perhaps no class of employers in the United States would be more interested in such an act than the street railway people, and all the troubles and tribulations they have experienced in the past from "ambulance chasers" and pettifogging lawyers will be merely the beginning of woes if they get a workers' compensation act. If the American Street & Interurban Railway Association is alive to the interests of its members it will take the matter in hand promptly and have a committee investigate the matter, and if such an act should be inevitable they should endeavor to get an improvement on the English act in the light of experience.

If anyone wishes to get a good idea of the operations of this act from a source which is as nearly free from bias as any can be, I suggest that he get Vol. 6 of "The Transactions of the Medico-Legal Society" for the year 1908-9. This is published by Frederick J. Lamb, 19 Webb Road and 99 Northcote Road, Clapham Junction, S. W., London, England. This society is made up of leading medical and legal men of Great Britain, and its object is the promotion of medical and legal knowledge in all its aspects. The volume above referred to contains two papers which I think will be eye-openers to the advocates of a workers' compensation act. I give a few short extracts:

A writer in the *Law Times* says: "It (the workmen's compensation act) is playing havoc with the morals of the community. There is not a week passes but all through the country there are many cases of gross malingering. Hundreds of thousands of pounds must have been filched from the industrious, the hard-working and the honest by the malingering blackguard in the last few years. Has it come to this in the United Kingdom of Great Britain and Ireland that it no longer pays to be industrious and frugal and saving?"

The writer of one of the papers has the following by way of introduction:

"The workmen's compensation acts were framed with the intention of providing means for genuine workers who were disabled in the course of their employment—and few, of any shade of political opinion, will deny that it is fair that the employer should have to take his share in supporting a man who has been injured while working in his service. But, unhappily, in practice the scheme has led to much hardship to employers, and has exposed them to the plots and plans which lazy and dishonest men are ever ready to form in order to extract money. Such men are aided and abetted by the least reputable members of the legal profession. I know as a fact that it is the custom of some of the latter gentry to ascertain day by day from the receiving-room porters at the hospitals

the names and addresses of casualties treated there, and to offer the injured men to take charge of their cases. They then proceed to place every difficulty in the way of an amicable settlement in order to increase their own costs; and finally, when the case is settled, the unfortunate workmen find that only a proportion of the money awarded comes into their own pockets, while in the event of the claim not being sustainable, and of the employer gaining the case in the county court, no costs are ever forthcoming from the unsuccessful side. For this reason employers—or rather insurance companies, for these risks are usually covered by insurance—are very loth to contest a case, and prefer to come to terms, even though the case is recognized to be untenable. Workmen and their advisers are quite aware of this, and they use the fact to extort money on every possible occasion. Workmen have now only to meet with some trivial injury to make up their minds not to return to work without making a good sound profit from the mishap. Most of them still belong to friendly societies and clubs, and so long as they can deceive the club-doctor (who is usually too overworked to give their cases careful consideration) and can persuade him to go on signing their club papers they are getting half-pay from their employers and a substantial allowance in sick pay from the club, and are often receiving more money than if they were at work. I have not rarely met with men who have frankly (though perhaps incautiously) admitted this to me while I have been examining them. Any medical man who sees much of these cases must frequently come across instances of this."

To anyone who wishes to pursue the matter carefully from week to week I recommend the reading of *The Post Magazine and Insurance Monitor*, published by Thos. J. W. Buckley, 9 St. Andrews Street, Holborn Circus, London, E. C., England. There are also many works published upon the subject. One valuable one, although not recent in date, is "Bowstead on Workmen's Compensation," published by Sweet & Maxwell, Ltd., 3 Chancery Lane, London, W. C.

It has been said by those who are in a position to speak from personal knowledge that no piece of legislation in England of late years has been the cause of so much litigation as the workers' compensation act, and from my own personal experience, I regard it as one of the most pernicious pieces of legislation that has been enacted in an English-speaking country in later years. Much more might be said upon the subject, but I fear I have wearied you already. However, if what I have said will be the means of the employers of the United States giving the matter the attention it deserves, it will not have been amiss.

J. S. BADGER.

### PENNSYLVANIA RAILROAD JOINS AMERICAN STREET & INTERURBAN RAILWAY ASSOCIATION

Secretary Donecker of the American Street & Interurban Railway Association states that last week the Pennsylvania Railroad joined the American Street & Interurban Railway Association. This company owns the West Jersey & Seashore Railroad between Philadelphia and Atlantic City, which is equipped with electricity, and is also equipping its New York terminal from Harrison to New York.

This is the first of the large trunk lines to join the association, although the New York, New Haven & Hartford Railroad is indirectly represented in the association through its extensive trolley interests in Massachusetts and Connecticut, and the New York Central & Hudson River Railroad and the Delaware & Hudson Railroad through their ownership of trolley lines in central New York. The American Street & Interurban Railway Association is actively taking up the subject of electric equipment for heavy traction service, a fact which is instanced by the recent appointment of a committee on heavy electric traction by the Engineering Association.

The Cie Generale Française de Tramways proposes to construct new lines at Nancy.

## EXHIBIT OF UNITED RAILWAYS COMPANY OF ST. LOUIS AT LOCAL ELECTRIC SHOW

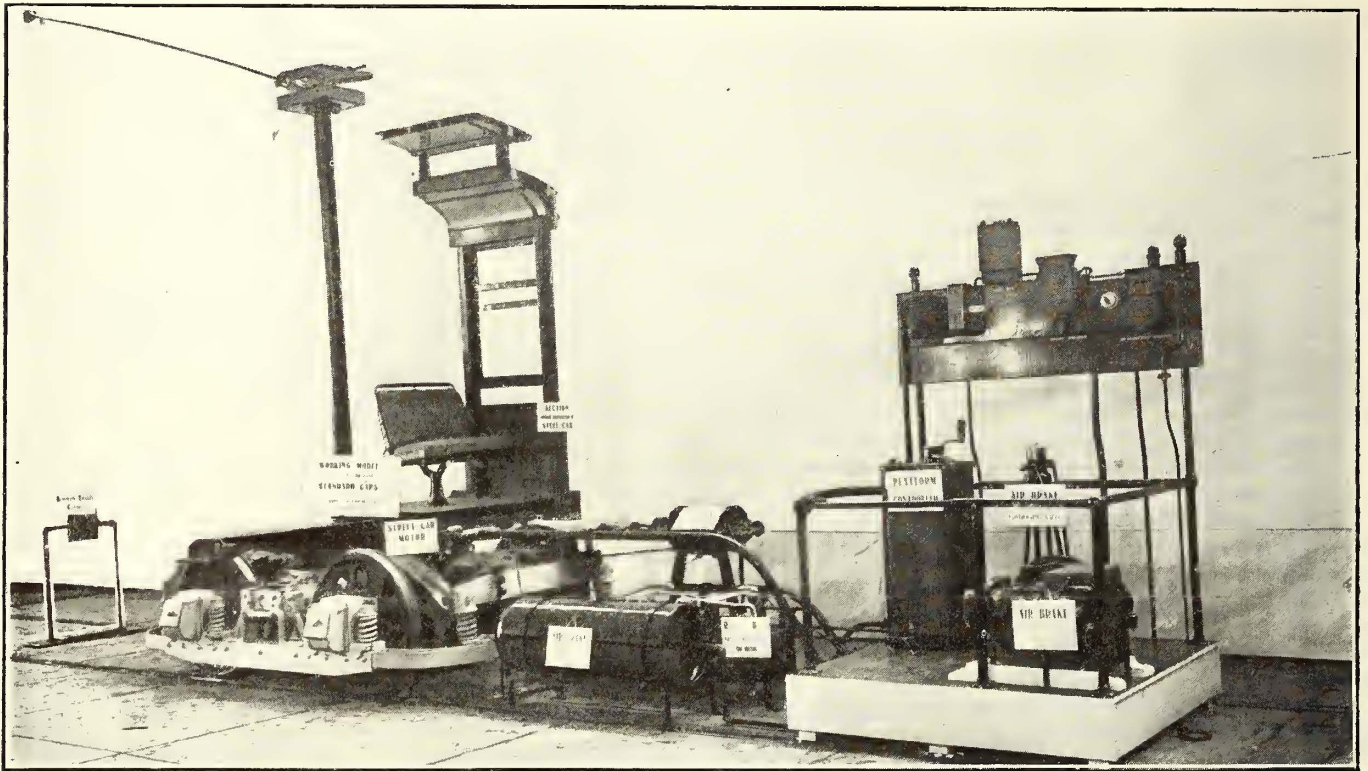
The United Railways Company of St. Louis made an exhibit at the Electric Show held at the Coliseum from May 28 to June 2 which attracted favorable attention. The exhibit consisted of an historical portion showing the evolution of street railway practice from the primitive methods first employed, and also of several moving exhibits. As shown in the accompanying half-tone view, there was exhibited a motor truck together with a cross section of a car with all the electric appliances and air brake appliances used in operation. The truck was jacked up so that the wheels could turn. The gears were covered with transparent gear cases, the motor caps were opened, signs were placed on all the apparatus and an attendant operated the motors and air brakes while explaining their uses to the spectators. A large crowd was constantly around this exhibit and its interest was shown by the many questions which were asked.

Another attractive exhibit consisted of an electrically-oper-

ated track switch. A complete switch was shown and the movement of the switch was effected by means of a controller and a sliding trolley base which passed over an ordinary trolley contact. The other exhibits consisted of a set of hose jumpers for use at fires, which were shown ready for operation; a gasoline automobile emergency wagon, one of eight just completed in the shops of the United Railways Company; a standard car just completed in the shops, seating 48 people, shown side by side with a bobtail car seating 12 passengers operated in St. Louis 25 years ago. This exhibit illustrated, more than anything else, the great advance which has been made in electric railway practice during the past 25 years.

The historical exhibit included two grips formerly in use upon the St. Louis cable roads, and a series of full-sized track sections, 4 ft. long, showing the progress which has been made in track construction. The first section was laid with 33-lb. flat rail on wooden stringers and ballasted with crushed rock; the second section was laid with "Butterfly" rail, 45 lb. per yard, and ballasted with crushed rock; the third section illustrated the present standard track construction of the United Railways

Company and showed the track consisting of 112-lb. 9-in. Trilby rail laid on wooden ties, 2 ft. centers, the ties resting on concrete 6 in. deep, with the concrete extending around and above the ties high enough to carry the paving of 3½-in. creosoted wooden blocks. A statement of the amount of this kind of track which has been laid in this city during the past four years, together with the estimated cost of about \$30,000 per mile, accompanied this section. This track exhibit attracted a great deal of attention, and illustrated very thoroughly the great improvement which has been made in track construction, and also the tremendous increase in the cost of this construction since horse car times. The fourth section showed a full sized section of 95-lb. 7-in. T-rail laid with paving. The use of this T-rail is not at present allowed in St. Louis, but it was hoped that an exhibition of this sort would show that there were no undesirable features connected with the use of T-rail in paved streets. In connection with the track exhibit a number of rail sections, beginning with the old flat horse car rail and ending with the present 9-in. Trilby rail, were exhibited to show the evolution of the street car rail.



Equipment Exhibit of the United Railways of St. Louis at Electrical Show, Illustrating the Several Parts of a Car and Its Motive Apparatus

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Twenty enlarged photographs showing the evolution of the street car from the original horse car of 1832 up to the present standard were shown. There were also exhibited enlarged photographs of typical buildings and appliances used in the street railway business.

There were distributed to all spectators cards which were intended to show the extent of the business and to impress upon the public some facts which are difficult to get into the public press. In order to get the visitors to preserve these cards a coupon was attached good for a street railway guide of St. Louis, which the company is having printed. About 20,000 of these cards were distributed. The data on these cards stated that during the year 1909 the United Railways Company of St. Louis transported 326,045,616 passengers, an average of about 900,000 passengers per day. The entire population of this city was transported 465 times, and the entire population of the United States was transported four times. Of this total, 99,311,000 passengers were carried on transfers, which meant transporting the entire population of St. Louis 142 times during the year free of charge.

To do this work there were required 1200 cars, 2800 trainmen and 3000 other employees. There were maintained 453 miles of track and 90 bridges which required during the year: 92,000 cu. yd. of rock; 67,000 cu. yd. of sand; 110,000 barrels of cement. There were used 100 buildings, in which were utilized 60,000 hp of power plants, which consumed 460,000 tons of coal. an average of 1260 tons or 30 carloads of coal per day. There were printed 191,930,000 transfers, which required 130 tons of paper. There was paid out \$3,734,000 in wages. There was paid \$629,000 in taxes, which makes the United Railways Company the largest taxpayer in the State of Missouri. On the payment of five cents any person has this immense plant placed at his disposal.

MEETING OF THE COMMITTEE ON INTERURBAN RULES

The committee on interurban rules of the American Street & Interurban Railway Transportation & Traffic Association met in Fort Wayne, Ind., on June 7, to discuss the advisability of adopting as a whole, or in modified form, the standard code of train rules of the American Railway Association in place of the code of interurban rules which was adopted by the Transportation & Traffic Association last October at the Denver convention. Those present at the meeting were: C. D. Emmons, Fort Wayne & Wabash Valley Traction Company, chairman; H. A. Nicholl, Indiana Union Traction Company; J. W. Brown, West Penn Railways Company, and J. E. Duffy, Syracuse Rapid Transit Railway. Mr. Emmons announced that C. A. Coolidge, Oregon Electric Railway Company, and F. D. Carpenter, Western Ohio Railway, had resigned from the committee on account of pressure of other duties and that these two vacancies had been filled by the appointment of J. E. Duffy, of the Syracuse Rapid Transit Railway Company, and F. A. Boutelle, Puget Sound Electric Railway. Mr. Emmons said that the chairman of the committee on city rules had tried to arrange for a joint meeting with the committee on interurban rules, but had not found it possible to do so up to the present time.

Mr. Emmons, the chairman of the interurban rules committee, some time ago sent out a data sheet to member companies asking them for criticisms of the rules as adopted last October. Replies had been received up to the time of the meeting from 56 companies operating about 6000 miles of track. These replies had been tabulated by the chairman. Twenty-one companies were opposed to the adoption of the American Railway Association rules and 15 companies were in favor of their adoption. The other 20 companies which replied did not express any opinion on this question. After a brief discussion of the information received through the data sheets which had been returned, the committee took up the consideration of the interurban code of rules.

It was agreed to submit to the association a rule book with the following wording on the cover:

BOOK OF RULES
Name of Railroad Company

The inside front cover is to be arranged with sufficient signature lines so that the book can be reissued to five men without using pasters.

The title page will read: "Rules of the ..... R. R. Co. for the Government of the Transportation Department ..... to take effect ....."

The general notice and form of order putting the rules in effect, which is contained in the American Railway Association standard code, was approved as a substitute for a general notice in the interurban code. It reads as follows:

(Form of order putting rules in effect)

The rules herein set forth govern the railroads operated by the ..... Company. They take effect ..... superseding all previous rules and instructions inconsistent therewith.

Special instructions may be issued by proper authority.

(Name) .....
(Title) .....

GENERAL NOTICE

To enter or remain in the service is an assurance of willingness to obey the rules.

Obedience to the rules is essential to the safety of passengers and employees, and to the protection of property.

The service demands the faithful, intelligent and courteous discharge of duty.

To obtain promotion capacity must be shown for greater responsibility.

Employees, in accepting employment, assume its risks.

It was agreed to designate the general rules by letters rather than numbers, thus following the practice of the American Railway Association. The general rules were then considered one by one.

Rule A of the American Railway Association, "Employees whose duties are prescribed by these rules must provide themselves with a copy," was approved in place of Rule 1 of the interurban code.

Rule B of the American Railway Association, "Employees must be conversant with and obey the rules and special instructions. If in doubt as to their meaning they must apply to proper authority for an explanation," was approved in place of Rule 2 of the interurban code.

Rules 3 and 4 of the interurban code are to be eliminated, since Rule 4 is covered by Rule K of the American Railway Association as follows: "Persons authorized to transact business at stations or on trains must be orderly and avoid annoyance to patrons."

The question was raised as to the necessity of requiring a daily inspection of the bulletin board, but Rule 5 of the interurban code was allowed to stand. The committee agreed to accept the substance of the interurban Rule 6 for a general rule to be designated as M.

Rule C of the American Railway Association, "Employees must pass the required examinations," was substituted for Rule 7 of the interurban code. The committee agreed to eliminate Rule 8 of the interurban code and suggested using only the last paragraph of Rule 9, which reads "Anything which may affect the safe and proper operation of the railroad or the interests of the company in any way must be promptly reported." This will be general rule N. Rule L of the American Railway Association was substituted for Rule 10 of the interurban code. It reads as follows: "In case of danger to the company's property employees must unite to protect it."

Rule 11 of the interurban code was accepted and will be designated as Rule O. Some members of the committee said that the legal departments felt that a rule of this kind was necessary, from a legal standpoint. The committee agreed to omit Rule 12 of the interurban code and to substitute Rule K of the American Railway Association in place of Rule 13 of the present interurban code. Rule G of the American Railway Association, which reads, "The use of intoxicants by employees while on duty is prohibited. Their use or the frequenting of places where they are sold is sufficient cause for dismissal," will be used in place of Rule 14. Rule 15 of the interurban code will be designated as H, Rule 17 as P, Rule 18 as Q, Rule 19 as J, Rule 20 as R and Rule 21 as S. Rules 22 and 23 are to be eliminated and Rule 24 will be designated as T, Rule 25 as U and Rule 26 as V. Rule 27 will be designated as L and the following rule will be designated as W and will be used in place of Rule 28: "Employees while on duty connected with the trains on any division or railroad are under the authority and must conform to the order of the officers of that division or railroad and while at car houses are under the authority and must conform to the orders of the ..... or his authorized agent."

Rule 29 will be designated as X, Rule 30 will be eliminated and Rule 31 will be designated as Y. The last paragraph of Rule 31, regarding the deposit required to guarantee the return of company property is to be eliminated. Rule 32 will be designated as Z.

DEFINITIONS

The definitions of the American Railway Association were

adopted by the committee in place of the definitions now included in the interurban code with a few slight changes. A foot-note will be added stating that the committee does not recommend operation by superiority of direction. They are as follows:

Definitions

ENGINE.—A locomotive propelled by any form of energy.

TRAIN.—An engine, or more than one engine coupled, with or without cars, displaying markers.

REGULAR TRAIN.—A train authorized by a time-table schedule.

SECTION.—One of two or more trains running on the same schedule displaying signals or for which signals are displayed.

EXTRA TRAIN.—A train not authorized by a time-table schedule. It may be designated as—

Extra—for any extra train, except work extra;

Work extra—for work train extra.

SUPERIOR TRAIN.—A train having precedence over another train.

TRAIN OF SUPERIOR RIGHT.—A train given precedence by train order.

TRAIN OF SUPERIOR CLASS.—A train given precedence by time-table.

TRAIN OF SUPERIOR DIRECTION.—A train given precedence in the direction specified in the time-table as between trains of the same class.

NOTE.—Superiority by direction is limited to single track.

TIME-TABLE.—The authority for the movement of regular trains subject to the rules. It contains the classified schedules of trains with special instructions relating thereto.

SCHEDULE.—That part of a time-table which prescribes class, direction, number and movement for a regular train.

DIVISION.—That portion of a railway assigned to the supervision of a .....\*

\*The blank may be filled in by each road to suit its own organization.

SUBDIVISION.—A part of a division so designated on the time-table.

MAIN TRACK.—A track extending through yards and between stations, upon which trains are operated by time-table or train order, or the use of which is controlled by block signals.

SINGLE TRACK.—A main track upon which trains are operated in both directions.

DOUBLE TRACK.—Two main tracks, upon one of which the current of traffic is in a specified direction, and upon the other in the opposite direction.

THREE (OR MORE) TRACKS.—Three (or more) main tracks, upon any of which the current of traffic may be in either specified direction.

CURRENT OF TRAFFIC.—The movement of trains on a main track, in one direction, specified by the rules.

STATION.—A place designated on the time-table by name, at which a train may stop for traffic; or to enter or leave the main track; or from which fixed signals are operated.

SIDING.—A track auxiliary to the main track for meeting or passing trains, limited to the distance between two adjoining telegraph stations.

FIXED SIGNAL.—A signal of fixed location indicating a condition affecting the movement of a train.

NOTE TO DEFINITION OF SIGNAL.—The definition of "Fixed Signal" covers such signals as slow boards, stop boards, yard limits, switch, train order, block, interlocking, semaphore disc, ball or other means for indicating stop, caution or proceed.

YARD.—A system of tracks within defined limits provided for the making up of trains, storing of cars and other purposes, over which movements not authorized by time-table, or by train order, may be made, subject to prescribed signals and regulations.

YARD ENGINE.—An engine assigned to yard service and working within yard limits.

The definition of "Pilot" given in the American Railway Association code is to be amended so as to read as follows:

"Pilot.—A person assigned to a train when the engineman or conductor, or both, are not fully acquainted with the physical characteristics, or running rules of the road, or portion of the

road, over which the train is to be moved, and is responsible for safe operation of train."

The block signal Rules Nos. 71 to 76 of the interurban code are to be added to the definitions.

STANDARD TIME

The committee approved the present Rule 77 of the interurban code in place of Rule 1 of the American Railway Association. Rule 2 of the American Railway Association was adopted in place of Rule 78 and Rule 79 of the interurban code. It reads as follows:

2. Watches that have been examined and certified to by a designated inspector must be used by conductors, enginemen and .....\* The certificate in prescribed form must be renewed and filed with ..... every .....

(Form of Certificate)

CERTIFICATE OF WATCH INSPECTOR

This is to certify that on ....., 19.., the watch of..... employed as..... on the..... was examined by me. It is correct and reliable, and in my judgment will, with proper care, run within a variation of 30 seconds per week.

Name of Maker.....
Brand .....
Number of movement.....
Open or hunting case.....
Metal of case.....
Stem or key winding.....

Signed,
.....
Inspector.

Address .....

\*The Committee recommends that in filling the blank each company add such other classes of employees as it may desire.

Rule 3 of the American Railway Association, which reads, "Watches of conductors, motermen and ..... must be compared with a clock designated as a Standard Clock. The time when watches are compared must be registered on a prescribed form," was adopted in place of Rule 30 of the interurban code, with an added provision for the comparison of time by telephone or with a standard clock or with the watches of other employees who have standard time or have registered as required.

An additional rule, No. 3a, is to be added, reading as follows:

"Conductors and motormen must compare watches with each other before starting on each trip."

Rules 81, 82 and 82-a of the interurban code were eliminated.

TIME-TABLES

The committee recommended that Rules 83, 84 and 85 of the interurban code be retained, but that they should be renumbered respectively 4, 4-a and 4-b. Rule 5 of the American Railway Association was adopted in place of Rules 86, 87, 88 and 89 of the interurban code. It reads as follows: "5. Not more than two times are given for a train at any station; where one is given, it is, unless otherwise indicated, the leaving time; where two, they are the arriving and the leaving time.

"Unless otherwise indicated, the time applies to the switch where an inferior train enters the siding; where there is no siding it applies to the place from which fixed signals are operated; where there is neither siding nor fixed signal, it applies to the place where traffic is received or discharged.

"Schedule meeting or passing stations are indicated by figures in full-faced type.

"Both the arriving and leaving time of a train are in full-faced type when both are meeting or passing times, or when one or more trains are to meet or pass it between those times.

"When trains are to be met or passed at a siding extending between two adjoining stations, the time at each end of the siding will be shown in full-faced type.

"Where there are one or more trains to meet or pass a train between two times, or more than one train to meet a train at any station, attention is called to it by ....."

Rule 90 of the interurban code was retained, but is to be renumbered 6. Rule 91 of the interurban code is to be eliminated.

SIGNAL RULES

Rules 92, 93 and 94 are to be retained but renumbered respectively 7, 8 and 9.

VISIBLE SIGNALS

The committee recommends the adoption of American Railway Association Rule 10 in place of the interurban code Rule 95. Rule 10 is as follows:

10 COLOR SIGNALS

| COLOR                | INDICATION  |
|----------------------|---|
| (a) Red.             | Stop.   |
| (b) ———              | Proceed, and for other uses prescribed by the Rules.              |
| (c) ———              | Proceed with caution, and for other uses prescribed by the Rules. |
| (d) Green and White. | Flag stop. See Rule 28.   |
| (e) Blue.            | See Rule 26.  |

It recommends retaining Rule 96, renumbered 11, in place of Rule 11 of the American Railway Association code. The committee approved of the use of Rule 12 of the American Railway Association in place of Rule 99 of the interurban code. Rule 12 is as follows:

|  |                     |
|--|---------------------|
| (a) Swung across the track.  | Stop.               |
| (b) Raised and lowered vertically.   | Proceed.            |
| (c) Swung vertically in a circle at half arm's length across the track when the train is standing. | Back.               |
| (d) Swung vertically in a circle at arm's length across the track, when the train is running.      | Train has parted.   |
| (e) Swung horizontally above the head, when the train is standing.                                 | Apply air brakes.   |
| (f) Held at arm's length above the head, when the train is standing.                               | Release air brakes. |

Rule 98 of the interurban code was satisfactory but it will be renumbered 13. Rule 99 of the interurban code will be eliminated and Rule 14 of the American Railway Association code will be substituted with a slight re-arrangement.

Rule 14 as at present arranged in the American Railway Association code is as follows:

WHISTLE SIGNALS

NOTE.—The signals prescribed are illustrated by "o" for short sounds; "—" for longer sounds. The sound of the whistle should be distinct, with intensity and duration proportionate to the distance signal is to be conveyed.

| SOUND         | INDICATION   |
|---------------|--|
| (a) o         | Stop. Apply brakes.  |
| (b) — — —     | Release brakes.  |
| (c) — o o o   | Flagman go back and protect rear of train.   |
| (d) — — — — — | Flagman return from west or south.   |
| (e) — — — — — | Flagman return from east or north.   |
| (f) — — — — — | When running, train parted; to be repeated until answered by the signal prescribed by Rule 12 (d).* Answer to 12 (d).* |
| (g) o o       | Answer to any signal not otherwise provided for.   |
| (h) o o o     | When train is standing, back. Answer to 12 (c)† and 16 (c). When train is running, answer to 16 (d).                   |
| (i) o o o o   | Call for signals.  |
| (k) — — o o   | To call the attention of yard engines, extra trains or trains of   |

the same or inferior class or inferior right to signals displayed for a following section.

(l) — — — o o

Approaching public crossings at grade.

(m) — — — — —

Approaching stations, junctions and railroad crossings at grade.

A succession of short sounds of the whistle is an alarm for persons or cattle on the track.

Rule 100 of the interurban code will be eliminated because it is included as part of the proposed Rule 14. The committee agreed to adopt interurban Rule 101, as Rule 15 and favored using interurban code Rule 102 as Rule 34.

Interurban code Rule 103 will be eliminated and Rule 16 of the American Railway Association will be substituted with an optional signal "D" for one bell to stop.

Rule 16 at present reads:

COMMUNICATING SIGNALS

| SOUND      | INDICATION   |
|------------|--|
| (a) Two.   | When train is standing, start.                       |
| (b) Two.   | When train is running, stop at once.                 |
| (c) Three. | When train is standing, back the train.              |
| (d) Three. | When train is running, stop at next station.         |
| (e) Four.  | When train is standing, apply or release air brakes. |
| (f) Four.  | When train is running, reduce speed.                 |
| (g) Five.  | When train is standing, call in flagman.             |
| (h) Five.  | When train is running, increase speed.               |

Rule 104 of the interurban code was adopted as 16-a, Rule 105 was eliminated, and Rule 106 was approved as 16-a.

TRAIN SIGNALS

Rule 17 of the American Railway Association was adopted instead of Rule 108 of the interurban code. It reads:

17. The headlight will be displayed to the front of every train by night, but must be concealed when a train turns out to meet another and has stopped clear of main track, or is standing to meet trains at the end of double track or at junctions.

Rule 108 of the interurban code was added as Rule 17-a.

Rules 18 to 26 of the American Railway Association are used in place of Rules 109 to 118 in the interurban code. They are as follows:

18. Yard engines will display the headlight to the front and rear by night. When not provided with a headlight at the rear, two white lights must be displayed. Yard engines will not display markers.

19. The following signals will be displayed, one on each side of the rear of every train, as markers, to indicate the rear of the train: By day, green flags; by night, green lights to the front and side and red lights to the rear; except when the train is clear of the main track, when green lights must be displayed to the front, side and rear.

20. All sections except the last will display two green flags, and in addition, two green lights by night, in the places provided for that purpose on the front of the engine.

21. Extra trains will display two white flags and, in addition, two white lights by night, in the places provided for that purpose on the front of the engine.

22. When two or more engines are coupled, the leading engine only shall display the signals as prescribed by Rules 20 and 21.

23. One flag or light displayed where in Rules 19, 20 and 21 two are prescribed will indicate the same as two; but the proper display of all train signals is required.

24. When cars are pushed by an engine (except when shifting or making up trains in yards) a white light must be displayed on the front of the leading car by night.

25. Each car on a passenger train must be connected with the engine by a communicating signal appliance.

26. A blue flag by day and a blue light by night, displayed at one or both ends of an engine, car or train, indicates that workmen are under or about it; when thus protected it must

not be coupled to or moved. Workmen will display the blue signals and the same workmen are alone authorized to remove them. Other cars must not be placed on the same track so as to intercept the view of the blue signals, without first notifying the workmen.

Rule 119 of the interurban code will be retained but will be renumbered 26-a. The committee decided to eliminate Rule 120. Rules 121 to 124 covering semaphore signals are to be eliminated. Rule 125 of the interurban code was approved and renumbered 27. Rule 126 is to be renumbered 28 and for Rule 126 of the interurban code is to be substituted Rules 29, 30 and 31 of the American Railway Association code, reading as follows:

"29. When a signal (except a fixed signal) is given to stop a train, it must, unless otherwise provided, be acknowledged as prescribed by Rule 14 (g) or (h).

"30. The engine-bell must be rung when an engine is about to move.

"31. The motor gong must be rung on approaching every public road crossing at grade, and until it is passed; and the whistle must be sounded at all whistling posts."

Rules 131, 132 and 133 of the interurban code were approved and will be renumbered 31, 32 and 33 respectively. Rule 102 of the interurban code will be renumbered 34, leaving the distance blank. The committee agreed to use interurban Rule 129 as Rule 35 and Rule 130 as new Rule 36.

Interurban rule 200 was accepted as new Rule 71. Rule 71 of the American Railway Association code is to be included as optional with a footnote that the committee did not consider it good interurban practice to assign superiority of direction. This rule reads:

"71. A train is superior to another train by right, class or direction.

"Right is conferred by train order; class and direction by time-table.

"Right is superior to class or direction.

"Direction is superior as between trains of the same class."

Rule 72 of the American Railway Association was adopted as new Rule 72 with the same footnote, regarding the use of superiority by direction. It reads:

"72. Trains of the first class are superior to those of the second; trains of the second class are superior to those of the third; and so on.

"Trains in the direction specified by the time-table are superior to trains of the same class in the opposite direction."

Rule 202 of the interurban code was adopted as new Rule 73.

#### MOVEMENT OF TRAINS

The committee agreed to adopt Rule 82 of the American Railway Association as new Rule 82. It reads as follows: "Time-table schedules, unless fulfilled, are in effect for \_\_\_\_\_ hours after their time at each station.

"Regular trains — hours behind either their schedule arriving or leaving time at any station lose both right and schedule, and can thereafter proceed only as authorized by train order."

The American Railway Association Rule 83 which reads:

"83. A train must leave its initial station on any division (or subdivision), or a junction, or pass from double to single track, until it has been ascertained whether all trains due, which are superior, or of the same class, have arrived or left," was also adopted with the addition of the second and third paragraphs of Rule 203 of the interurban code. Rule 203-a of the interurban code was approved as new Rule 83-a.

Rule 84 of the American Railway Association was adopted in place of Rule 204 of the interurban code and Rules 85 and 86 of the American Railway Association code were adopted in place of Rule 205 of the interurban code. These rules are as follows:

"84. A train must not start until the proper signal is given.

"85. When a train of one schedule is on the time of another schedule of the same class in the same direction, it will proceed on its own schedule.

"Trains of one schedule may pass trains of another schedule

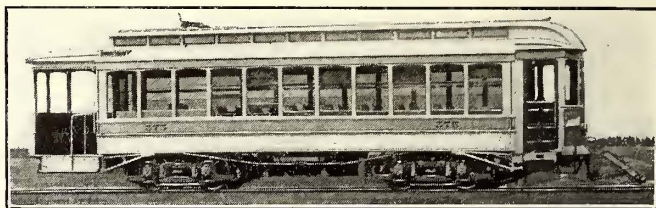
of the same class, and extras may pass and run ahead of extras.

"86. An inferior train must clear the time of a superior train, in the same direction, not less than five minutes."

The meeting then adjourned and further consideration of the rules was postponed until June 22, 1910, when another meeting is to be held at the Hotel Hollenden, Cleveland, Ohio.

### PAY-AS-YOU-ENTER CARS FOR TOLEDO

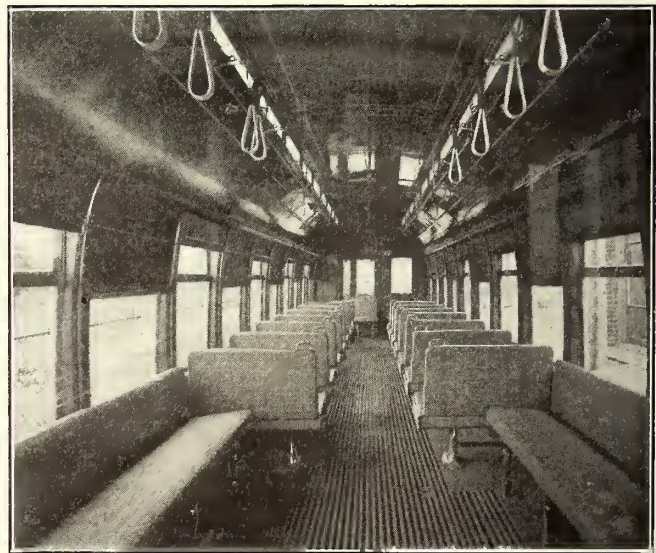
The G. C. Kuhlman Car Company, Cleveland, Ohio, has recently completed 20 vestibuled cars for the Toledo Railway & Light Company, Toledo, Ohio, under license of the Pay-as-You-Enter Car Corporation. The carbody arrangements for prepayment operation include a single sliding door placed at the forward right hand side in the front end and two single sliding doors at the rear end. The front platform is 4 ft. 4 in. long over the vestibule sheathing and has a step opening at the right hand side looking forward. This step is controlled by the motorman in connection with the vestibule folding doors. The



Toledo Pay-as-You-Enter Car

opposite side of the front vestibule is paneled and arranged for drop sash. The rear vestibule is 6 ft. 6 in. over the sheathing. The step opening is on the right hand side and is railed for entrance and exit. The opposite side of this vestibule is also paneled up.

The bottom framing consists of 4-in. x 7 $\frac{3}{4}$ -in. yellow pine side sills covered with a  $\frac{3}{8}$ -in. x 15-in. steel plate which is reinforced at the bottom by an angle iron; two 5 $\frac{1}{4}$ -in. white oak end sills; 4 $\frac{1}{2}$ -in. x 5 $\frac{1}{2}$ -in. white oak center cross joists. The body framing includes 3 $\frac{3}{4}$ -in. corner posts; 3 $\frac{1}{4}$ -in. side posts;



Interior of Toledo Car, Showing Extra Seat at the Front End

belt rail of grained edge yellow pine; ash ribs; truss rods of double refined iron, etc. Each platform is supported on channel iron knees. A feature of the roof construction is the use of concealed  $\frac{5}{8}$ -in. steel rafters which are distributed to carry the strains from overhead apparatus to the best advantage. Every other of the ventilator sash is fitted with a bronze controller. The steps consist of oak pieces carried from malleable iron hangers and covered with safety tread. The angle iron

buffers are of the Brill type, supported on knees extended for their installation. Among other Brill specialties are the "Dumpit" sand boxes, pedal alarm gongs and signal bells.

The inside finish of the car is in cherry. The ceiling is of ¼-in. Agasote. The seats are of rattan and are of both the transverse and longitudinal type arranged as shown in the view of the car interior. The 11 windows on each side and the large windows in the front bulkhead are provided with Pantasote curtains, mounted on Haviland rollers with the Curtain Supply Company's ring fixture No. 88. The push-button system is operated from a dry battery. The Peter Smith Company heater installed on each car is located on the inner side of the front platform. Among other specialties supplied for these cars are Kirby-Neal headlights and "Eclipse" fenders.

Special attention was given to the car wiring. The motor-man's switch cabinet is lined with asbestos and contains a slate switchboard. The cable box is placed between the center stringers under the car with cast-iron spreaders. The interior is lined with ¼-in. asbestos board and coated twice with flameproof paint. After leaving the boxes, the cables are run in steel conduits. The motor lead conduits are brought to the king pin as closely as possible. Asbestos board ¼ in. thick and treated with waterproof paint is placed over the resistances and air compressor.

The principal dimensions of the car body follow: Length over end panel at sill, 30 ft. 8 in.; length over platform crown pieces, 41 ft. 6 in.; width at sill, including panels, 7 ft. 11½ in.; width over posts above belt rail, 8 ft. 2 in.; width over drip rail, 8 ft. 4 in.

### LIGHT M. C. B. TYPE INTERURBAN TRUCK

The Baldwin Locomotive Works, Philadelphia, Pa., have recently completed for the North Jersey Construction Company eight trucks of the M. C. B. equalized type. These trucks are to be used under interurban passenger cars which will be operated over the North Jersey Rapid Transit Company's line now under construction from Paterson, N. J., to a point near Suffern, N. Y., 14 miles distant. It is claimed by the builders that they are lighter in weight than any M. C. B. type trucks of similar wheel base and carrying capacity heretofore constructed. The weight of each truck exclusive of motors is 6700 lb.

The design is classed by the builders as 72-16-S., indicating a special truck with 72-in. wheel base and a maximum center pin load of 16,000 lb. The trucks are designed for a service requiring a maximum speed of 40 m.p.h., and will carry two Westinghouse No. 306 motors, arranged for bar suspension. The wheels which were made by the Standard Steel Works Company, are of forged and rolled steel, 33 in. in diameter, with rims 2½ in. thick. The journals are A. S. & I. R. A. standard, 3¾ in. x 7 in. in size.

These trucks differ from the Baldwin type A truck chiefly in the frames, which combine lightness, strength and simplicity of construction. The side frames are of wrought iron, 1¼ in. x 3 in.; they are bent down at the ends to form the front and back pedestals. The intermediate pedestals are bolted to the frames. Detachable gibs of wrought iron plate are fitted over the pedestals to protect the jaws from wear. The usual end frames are omitted.

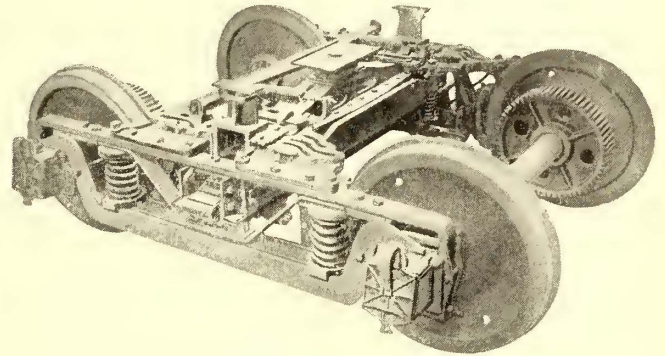
The truck transoms consist of two 8-in. channels, seated at their ends, on cast-steel filling pieces, and braced to the side frames by substantial cast-steel gussets. These gussets have ample bearings on the frames and transom, and because of the omission of the end frames their design has received special attention. They transmit a large portion of the stresses interchange between the side frames and transoms, and they are depended upon to keep the truck square. The transom channels are reinforced, between the gussets, by ¾-in. plates riveted to the top flanges.

The bolster is a steel casting, and is supported at each end, on a single full elliptic spring with plates 5 inches wide. The lower spring plank is composed of two 2¼-in. x 2¼-in. angles,

suspended on swing links. The swing link bearings are of cast steel, and the top bearing bridges the transom channels, thus forming an efficient stiffening member.

The equalizing beams are ¾ in. thick and are punched from steel plate. The frames are supported on the equalizers by single coil springs. The motors are inside hung and the suspension bars are placed close to the transoms and are spring supported from the frame gussets. The side bearings are of the usual sliding type.

The brakes are inside hung, and the brake work has been made as light as is consistent with strength. The two live levers are connected by a transverse beam placed close to the bolster and the pull rod is pinned to the middle of the beam.



Light M. C. B. Interurban Truck

The brake shoe hangers are supported from the frame gussets, which also serve as brake lever guides.

These trucks are simple in construction and as they are built largely of commercial iron and steel shapes, repairs can be easily made at any car barn having ordinary facilities. They are machine fitted throughout. The design is an interesting adaptation of the well known equalized type to conditions requiring a specially light, easy riding truck.

### TEST OF PIPE UNIONS

The National Tube Company of Pittsburgh, Pa., presents the following particulars of an interesting durability trial of "Kewance" pipe unions:

There were taken from stock one 1-in. octagon union and one 1½-in. round union. Each union was connected by a nipple, valve and nipple to a steam line. Into the other end of each union was screwed a nipple, on the outer end of which was another valve. The union connection was then tightened with an ordinary wrench, steam pressure was admitted by means of the valve next to the main, the outer valve was opened to blow out the air and then closed. Close scrutiny was given the union to be sure that there was no leakage of steam. The steam pressure was then shut off, the outer valve opened to blow out the steam and the union ring was unscrewed entirely from the brass end. This operation was repeated over one thousand times on each of the unions, and during the entire time neither union showed the slightest sign of leakage of steam.

After the completion of this test, each union was taken to the union department, and there subjected to the same test which is received by all new unions, that of 110 lb. air pressure under water. Each of these two unions was absolutely tight during this test, not the slightest bubble of air being shown when the union was submerged and subjected to the air pressure of 110 lb. per sq. in.

The point involved in this maker's test is the fact that wherever a union is to be disconnected or reconnected an indefinite number of times, the gasketless type of union is preferable to the gasket type for in the latter case a gasket must be cut and fitted, frequently involving not only costly delays but also uncertain joints.

## ELECTRIC RAILWAY LEGAL DECISIONS

### CHARTERS, ORDINANCES AND FRANCHISES

#### Alabama.—Passengers—Ejection—Damages.

Though a carrier has the lawful right to eject a passenger, it is answerable in damages for any unnecessary force or violence inflicted upon him by its agents acting within the scope of their authority.

Where a carrier has a rule which requires the collection of fares on each car of the train by the separate conductors on said cars, and that passengers changing cars must pay a second fare, a passenger, after taking passage on one car and paying his fare, is not authorized to take another car and refuse to pay a second fare when demanded, after being informed of the rule, although insufficient accommodations are provided on the first car.—(Birmingham Ry., Light & Power Co. v. Yielding, 46 S. Rep., 747.)

#### Massachusetts.—Eminent Domain—Erection of Trestle for Street Railroad—Compensation to Abutting Owners—Public Easement in Streets and Highways—Scope and Extent—Exercise of Police Power Without Taking Property—Changing Law of Nuisance—Elevated Railways and Other Uses as Additional Servitude—Right to Damages Therefor.

The declaration of St. 1903, p. 124, c. 163, sec. 3, that a trestle erected by a street railway company to carry its tracks over a railroad should be deemed not to be an additional easement or servitude, was coupled with a provision for compensation to any person legally damaged in his property by the construction, maintenance or use of the trestle. Held, that this was equivalent to a statement that the Legislature did not assume to determine finally whether the street could be so used without compensation to abutters.

The law in this commonwealth is exceedingly liberal to the public in its interpretation of the provisions under which streets and highways are laid out, and the public easement acquired under such statutes includes every kind of travel and communication for the movement and transportation of persons or property which is reasonable and proper in the use of a public street; but the kind of uses that may be made in the public interest, under a taking for a street, is limited to those which are reasonable, and in determining what is reasonable, not only the rights of the public as users of the streets in different ways are to be considered, but the rights of abutters as property owners along the line of the street are to be taken into account.

In the laying out of streets under our general laws, while it was assumed that they might be used in a variety of ways, for travel, transportation, transmission and communication, it was not assumed that they would be put to uses that would throw a very great burden on adjacent proprietors in the occupation or use of other property, and the public easement is only for uses that are reasonable in reference to their effect on adjacent property, as well as on other kinds of public uses of the street.

A use of the street which would constitute a grave private nuisance to property at the side of the street could not have been contemplated by the law as being acquired by a taking for a highway or street.

In the exercise of police power the Legislature may authorize or limit the use of property within certain bounds, thus changing to a certain extent the law of nuisance, without taking property under the right of eminent domain.

In determining whether an additional servitude is imposed, a distinction is recognized between elevated railways and other uses of streets for travel.

A trestle carrying defendant's street railway tracks over a railroad was constructed in the middle of the street opposite the house occupied by petitioner. The structure was of timber, and started east of the house at the grade of the street, rising gradually to the height of 20 ft. above the railroad measured to the top of a fence built on either side 4 ft. above the ties on which the rails were laid. In front of petitioner's house it was 12 ft. to the top of the fence. It was 15 ft. wide at the base and 12 ft. wide at the top, and carried two tracks, so placed that cars could not pass in opposite directions. It was not used by pedestrians or vehicles, but carried large, heavy electric cars. Its total

length was about 600 ft. and it was a great source of annoyance to petitioner and his family in the use of his premises, obstructing their view, light, air and free entrance in the front. While being constructed, the street between the house and the trestle was completely blocked with timber, so that horses and carriages could not get to the house, and so long as it remained it was not safe to hitch horses and let them remain on account of the noise of the cars. At night searchlights made the rooms as light as day and interfered with sleep. The street at this point was constructed with a reserve space between two driveways, the trestle being constructed in this space, after which it was impossible for a team to pass from the further roadway to the house of petitioner. The cars went up at a speed of 15 m.p.h. to 18 m.p.h., and going down they sometimes went as fast as 25 m.p.h. or 30 m.p.h., making a great noise, clanging the gong to warn travelers, so that it was impossible to sleep until late at night. Held, that its maintenance would have been an unreasonable use of the street, in the absence of statutory authority to provide for new and peculiar conditions; and that the right to construct it and use it was not included in the public easement in the street; and hence; under St. 1903, p. 124, c. 163, which made defendant liable to pay damages if the street was put to a use beyond that paid for under the general law when originally laid out, it was a taking of petitioner's property by right of eminent domain.

Under St. 1903, p. 124, c. 163, making a street railway company liable for the construction, maintenance and use of a trestle carrying its tracks over a railroad, if the street was thereby put to a use beyond that paid for under the general law when the street was originally laid out, the fact that the damage was not permanent does not affect an abutting owner's right to compensation for that which he suffered. (Lentell vs. Boston & W. St. Ry. Co., 88 N. E. Rep., 765.)

#### Michigan.—Railroads—Right of Way—Covenants—Forfeiture.

Where a railway company in good faith takes possession of a right of way, granted on certain conditions as to construction, no time of performance being stated, the grantor may not declare a forfeiture, and recover the land in ejectment, without notice to the company of the particular breach of which it is guilty, and without giving it time to remedy the breach. (Treat vs. Detroit United Ry., 122 N. W. Rep., 93.)

#### New York.—Municipal Corporations—Lease of Subway—Rights of Lessee.

The subway in the city of New York being the property of the city, the use thereof by a lessee of the city was limited to railroad purposes, and the use of any of the ducts for the sale and transmission of electric currents for motive power to third parties, whether the owners or operators of connecting or intersecting railways or not, is not one of such uses, and will be restrained by injunction, though the lease contains no express prohibition against it, but has no express grant of such right.—(City of New York v. Interborough Rapid Transit Co. et al., 106 N. Y. Sup. 296.)

#### New York.—Carriers—Carriage of Passengers—Transfers—Demand.

Where, at the time a passenger gave his transfer to the conductor, he held out his hand to receive another, but the conductor muttered something, not heard by the passenger, and passed on through the car, and, on his return, the passenger orally demanded a transfer, which was refused, there was a sufficient compliance with the rule of the company requiring passengers to demand transfers at the time of payment of fare.—(Sullivan v. Brooklyn Heights R. Co., 106 N. Y. Sup. 378.)

#### New York.—Carriers—Street Railroads—Transfers—Change of Direction—"Trip"—"Continuous Trip."

Railroad Law (Laws 1890, p. 1127, c. 565, sec. 104, as amended by Laws 1892, p. 1406, c. 676) requiring every street railroad company to carry between any two points on the roads over which it has the right to run cars any passenger desiring to make "one continuous trip" between such points for a single fare, and to give the passenger a transfer entitling him to "a continuous trip" to any point on the road, for the promotion of public convenience by the operation of railroads "as a single railroad with a single



rate of fare," does not prevent a street railway company authorized by sec. 4, subd. 8, to regulate the time and manner in which passengers shall be transported, and the compensation to be paid, from adopting regulations requiring passengers making use of transfers to use the same only in the same general direction of their initial trip; a trip conveying the idea of transportation in one direction, and a continuous trip, like a continuous line, extending in the same general direction.

A railroad corporation in operating a single system may operate two or more lines of road between its terminals, but a passenger purchasing a ticket to his point of destination has no option to take a circuitous route, and he is confined to the through route.

A railroad corporation, subject to the reserved power of the Legislature to alter its charter, has a right to exist under conditions as favorable as a sound state of policy, a due regard for the public interest, and a reasonable interpretation of the law will permit, and it should not be burdened by unnecessary implication of a legislative meaning beyond what those considerations demand; and when the Legislature in unmistakable terms, and within constitutional limits, has exercised its power to regulate corporations, it should be given full effect, but no inferences unfavorable to reasonable operation of the franchise of a corporation should be allowed from words susceptible of use in more than one sense.—(Kelly v. New York City Ry. Co., 84 N. E. Rep., 569.)

**Ohio.**—Railroads—Crossing Other Roads—Grade—Expense—Double Track.

In a proceeding under Sec. 3333-1, Rev. St. 1908, where a junior and senior railroad company are not able to agree as to a method of crossing, to procure an order of the court in that behalf, the court should equitably apportion between the roads only the cost of such a grade of approach as will be practicable. If the junior road desires a lesser grade, it may, with propriety, be charged with the entire additional expense of such construction.

The statute requires that not only the costs of constructing such crossing as the court may order, but also the cost of maintaining it, shall be equitably distributed between the companies.

When, in such case, the junior road has projected and is engaged in constructing a double-track road, the cost of a crossing sufficient in width to carry a double track should be equitably apportioned between the companies.—(Cincinnati Northern Traction Co. v. Pittsburg, C., C. & St. L. Ry. Co.; same v. Cincinnati, H. & D. Ry. Co., 86 N. C. Rep., 987.)

**Wisconsin.**—Eminent Domain—Compensation—Persons Entitled.

Where, there being no right to take for interurban purposes and no remedy provided for compensation during the ownership of another of land, and before conveyance by him the use of a street during his ownership for interurban purposes gave no right to any permanent use, such other was not entitled to damages in condemnation proceedings thereafter instituted, on the ground that he was the owner when the taking occurred, but the right to damages was in his grantee.—(Wilbur Lumber Co. v. Milwaukee Light, Heat & Traction Co., 114 N. W. Rep., 813.)

#### LIABILITY FOR NEGLIGENCE

**Alabama.**—Street Railroads—Injury to Person Near Track—Trespassers—Who Arc—Use of Streets—Duty of Railroad—Duty of One on Track—Contributory Negligence—Duty of Motorman—"Wantonness."

A street railroad employee, walking beside the track while going to his place of work in the usual way, was not a trespasser; the company having no exclusive or paramount right to the use of the part of the street occupied by its tracks, either as against other vehicles or as against pedestrians.

The duty of a street railroad company to recognize the rights of persons in the lawful use of streets is imperative, and, while it has the right of way in case of meeting or overtaking a person on the track, it is bound to exercise a proper degree of care and such reasonable prudence and precaution as the attending circumstances may require to avoid injuring such person.

One using a street occupied by street railroad tracks

is bound to exercise ordinary care and such reasonable prudence and precaution as the attendant circumstances may require to avoid being injured by a street car.

It is the duty of a motorman, on seeing a pedestrian on the track or dangerously near it, to give warning of the approach of the car by sounding the bell or otherwise; and failure to give such warning may constitute negligence.

While a motorman may, on seeing a person on the track, assume that he will get out of the way, such assumption may not be indulged beyond the time when the person's danger is seen to be imminent.

"Wantonness" is the conscious failure of one, charged with a duty to exercise due care and diligence, to prevent an injury after the discovery of the peril, or under circumstances where he is charged with a knowledge of such peril, and being conscious of the inevitable or probable results of such failure. (Birmingham Ry., Light & Power Co. vs. Williams, 48 Southern Rep., 93.)

**California.**—Carriers—Injury to Passenger—Negligence—Presumptions—Collisions—Companies Liable.

Where a passenger on a street car was injured in a collision between the car and the car of another street railroad at a crossing, a presumption of negligence on the part of the latter did not arise from the mere fact of the collision.

Whether a motorman was negligent who approached a crossing of another street railroad while a car of the latter was approaching on a level track, and within a few feet thereof, and in plain sight, in such manner and at such speed that he could not stop in time to avoid a collision if the other car continued to advance, depends on whether an ordinarily prudent man, having a due regard for the safety of the passengers on the other car, as to whom he owed the exercise of ordinary care, would have done what he did, though under an established custom of the two railroads his car had the right of way and the other car should stop, and, since a reasonable man might conclude that under the circumstances ordinary care required the motorman to approach the crossing in such a manner that he could stop in time if the other car did not stop, and that failure to do so was negligent as to a passenger on the other car, regardless of whether the motorman on the other car was also negligent, the issue of the motorman's negligence was for the jury.

Where the negligence of two street railroads contributed to the injury of a passenger of one of them, the passenger could recover from both railroads, or either. (Kimic vs. San Jose-Los Gatos Interurban Ry. Co. et al. (S. F. 5016), 104 Pac. Rep., 986.)

**Illinois.**—Carriers—Electric Railways—Passengers—Contributory Negligence—Riding on Steps—Instructions.

The stopping of an electric car at a place where passengers are customarily received, and opening the door to admit them, is an invitation to all persons desiring to travel on such car to board it, and when one in good faith boards a car in such circumstances the relation of carrier and passenger is established, the carrier's legal duties attaching before as well as after the payment of fare.

In an action against an electric railway company for the death of a passenger, crushed between two cars while riding on the steps of one of them, it was proper to receive parol evidence of a rule of the company requiring the inside vestibule doors to be closed when the cars were on double tracks, where there was no objection to the parol evidence.

In an action for the death of an electric railway passenger, an instruction that, if the carrier "permits" one to board its car without requiring payment in advance, the obligation of the passenger to pay stands for actual payment for the purpose of the giving effect to the contract, was not objectionable as assuming that the company "permitted" decedent to board the car, whereas there was no evidence showing that any employee of the company knew that he was on the car. (Petersen vs. Elgin, A. & S. Traction Co., 87 N. E. Rep., 345.)

**Pennsylvania.**—Carriers—Carriage of Passengers—Injuries—Contributory Negligence.

To attempt to board a street car going faster than a man could walk was contributory negligence barring a recovery for injuries sustained in being thrown to the ground.—(Quinn v. Philadelphia Rapid Transit Co., 73 Atl. Rep., 319.)

# News of Electric Railways

## Program of Master Car Builders' Association Convention

The forty-fourth annual convention of the Master Car Builders' Association will be held in Atlantic City, N. J., June 15-17, 1910. The sessions of the convention will be held in the Greek Temple on the Million-Dollar Pier. The president, executive committee and secretary will have their office in the Marlborough-Blenheim Hotel, which has been selected as headquarters. The enrollment committee will be located in the entrance to the pier. Each member of the association, immediately upon arrival, should go to the enrollment booth, register and procure his membership button, and be furnished a properly numbered celluloid disk showing his registration. Cards for registration will be furnished at the enrollment booth at the entrance to the pier. Members should note particularly that there will be a morning and afternoon session each day. Those members who are also members of the Master Mechanics' Association, and expect to attend both conventions, should register twice, once for each convention, in order that a proper record may be kept of those present at each convention. The following program for the meeting has been arranged:

### PROGRAM

#### WEDNESDAY, JUNE 15, 1910

##### MORNING SESSION, 10:00 A. M. TO 12:30 P. M.

Address by the president.  
 Reading of the minutes of the last meeting.  
 Report of secretary and treasurer.  
 Assessment and announcement of annual dues; appointment of committees on correspondence, resolutions, obituaries, etc.  
 Election of auditing committee.  
 Unfinished business.  
 New business.  
 Discussion of reports on: Nominations. Revision of standards and recommended practice.

##### AFTERNOON SESSION, 2:00 P. M. TO 4:00 P. M.

Discussion of reports on: Train brake and signal equipment. Brake-shoe tests. Rules for loading materials.

#### THURSDAY, JUNE 16, 1910

##### MORNING SESSION, 10:00 A. M. TO 12:30 P. M.

Discussion of reports on: Rules of interchange. Coupler and draft equipment. Car wheels. Safety appliances. Freight car trucks.

##### AFTERNOON SESSION, 2:00 P. M. TO 4:00 P. M.

Discussion of reports on: Splicing underframes. Car framing, roofs and doors. Tank cars. Train pipe and connections for steam heat.

#### FRIDAY, JUNE 17, 1910

##### MORNING SESSION, 10:00 A. M. TO 12:30 P. M.

Discussion of reports on: Consolidation of Master Car Builders' and Master Mechanics' Associations. Classes of cars. Salt-water drippings from refrigerator cars. Mounting pressures on wheels and axles. Individual paper on "Design of Axle to Carry 50,000 Pounds," by E. D. Nelson, engineer of tests, Pennsylvania Railroad. Springs for freight car trucks.

##### AFTERNOON SESSION, 2:00 P. M. TO 4:00 P. M.

Discussion of reports on: Train lighting and equipment. Lumber specifications.  
 Unfinished business: Reports of committees on correspondence, resolutions, and such other committees as may be named during the convention.  
 Election of officers. Adjournment.

The convention of the American Railway Master Mechanics' Association will be held in Atlantic City on June 20-22, 1910.

### Situation in Detroit

Mayor Breitmeyer of Detroit sent a letter to J. C. Hutchins, president of the Detroit United Railway, on June 7, 1910, in which he asked whether the company would accept the terms of the ordinance drawn by Clyde I. Web-

ster, counsel for the committee of fifty, if the Council adopted the ordinance. The Webster ordinance was prepared at the time the committee of fifty presented its report to the Council, but provision was made for writing the value of the property into the ordinance when that point should be finally settled.

On June 6, 1910, the executive committee of the committee of fifty decided to ask the Mayor and the Council to be relieved of the obligation to give a hearing to the company regarding the value to be placed in the Webster ordinance, but disavowed any desire not to lend its aid toward an equitable settlement of the street railway situation. The committee states that after having considered various plans for fixing a valuation for the purposes of the ordinance at the least possible expenditure of time and money, all have been rejected except three, which follow:

The Mayor and the Council to proceed with the hearing before the present court of arbitration, with Mr. Barcroft in charge of the engineering work on behalf of the city.

The Mayor and the Council to arrange for a new appraisal, to be conducted as they deem most expedient.

The appointment of a valuation board of three engineers, one to be selected by the city, one by the company and the third by these two, the three to be authorized to call in such experts as they may need, the expense to be borne jointly by the city and the company.

The committee in its report refers to the conduct of Mr. Barcroft as "unfortunate, deplorable, and, to our minds, wholly inexcusable." Mr. Webster and Frederick W. Walker, who was retained to succeed Mr. Barcroft, acting as a special committee of the committee of fifty, say in their report that "for any engineer to attempt to make use of this (Barcroft) appraisal, without the original reports and all the details, would be unwise and very dangerous." As stated in the *ELECTRIC RAILWAY JOURNAL* of June 4, 1910, Mr. Webster and Mr. Walker estimated that the cost of making proper preparations and conducting the hearings before the board of arbitration with the Barcroft appraisal as a basis would be \$20,000. They say that five of the eight non-resident engineers who assisted Mr. Barcroft in his work have signified their willingness to appear before the board of arbitration and explain in detail the valuations with which they were connected, so far as it is possible for them to do so, although their detail work is in Mr. Barcroft's possession. Mr. Webster and Mr. Walker in their report say:

"A more careful study of the Barcroft appraisal and of the inventory of the property as prepared by the company has convinced us that, in the form in which this appraisal was published, it is impossible, with any reasonable degree of accuracy, to determine what property is included and what is not included in arriving at the values under the several sections which go to make up the total value placed upon the railway. We have come to the conclusion that, except to Mr. Barcroft personally, the appraisal in book form without the details which has been withheld, which has cost about \$17,000, is of no real value, and therefore a new appraisal is a necessity unless Mr. Barcroft will appear and produce the details and testify and explain.

"The causes which Mr. Barcroft claimed prevented his appearance have, in our opinion, been entirely removed. An explanation of 'the proceedings before the board of arbitration' will show that the Detroit United Railway, through its attorney, has stipulated that it will be bound by the valuation, determined by this board, and will submit to the board 'any records, proceedings, or cost bills or documents that the court shall deem essential to a determination of the question before us.'

"The full text of the letters which are in your files convince us that Mr. Barcroft would not, under any circumstances, act in conjunction with the committee of fifty and give the testimony and evidence and produce the details necessary to substantiate and make applicable for the purposes intended this appraisal undertaken by the committee of fifty, the summary of which the committee has received in book form, while the detail, which constitutes the most valuable portion of the work paid for, has been held back."

**Transit Affairs in New York**

Announcement has been made by a member of the firm of the Bradley-Gaffney-Steers Contracting Company that the firm is prepared to bid for the building, equipment and operation of the new tri-borough subway.

William R. Willcox, chairman of the Public Service Commission, appeared before Judge Brady of the Supreme Court on June 1, 1910, to show cause why he should not be punished for contempt of court, not only reiterated the allegation that Justice Brady had been disqualified by reason of interest to sit in judgment on the commission's \$750,000 penalty suit against Frederick Whitridge, receiver of the Union Railway Company, but declared that in so doing the Justice had committed a misdemeanor. He pleaded not guilty to the formal charge of contempt of court, and on this account the court adjourned the case until June 11, 1910.

**Cleveland Traction Situation**

At a meeting of the directors of the Cleveland Railway on June 4, 1910, the quarterly dividend of 1½ per cent was declared, payable on July 1, 1910, to stockholders of record on June 11, 1910. This is in accordance with the provision incorporated in the contract with the city which guarantees a return of 6 per cent on the investment.

The directors of the company also approved the proposed contract with the Cleveland, Southwestern & Columbus Railway for joint use of the latter's tracks on Lorain Street. After the City Council approves the contract it will be formally executed. The Cleveland Railway is to pay a rental of \$1,250 a year, or half the interest on the investment in tracks, and 6 cents per car mile for the mileage operated. Of the mileage rental 3½ cents is for power and the remainder for repairs.

The demand of the carmen for an increase of about 10 per cent in wages, if granted, would increase the operating expenses about \$200,000 a year and almost exceed the surplus indicated by the reports since the company took over its property from the Municipal Traction Company. Great interest will attach to the wage arbitration proceedings, to be begun shortly, as any increase that may be granted will affect the effort to operate at a 3-cent fare, plus 1 cent for a transfer.

Although no change in the allowance per car-mile for maintenance may be necessary, a careful watch is being kept of all costs of this character. Within the past six months an advance of about 20 per cent has been noted in shop work, due to increased cost of labor and materials.

No action was taken by the directors on June 4 toward financing any further improvements.

**New Line Opened in Texas.**—The Port Arthur (Tex.) Traction Company has placed its line in Port Arthur in operation. There are 7 miles of road, over which six Barber cars are in regular service.

**Progress of Investigation in Toledo.**—J. B. Tanner, who is examining the books of the Toledo Railways & Light Company, Toledo, Ohio, for the city administration of Toledo, at the suggestion of A. E. Lang, president of the company, has announced that a report will be made not later than July 15, 1910, which will give the administration a general insight into the business of the company.

**Change in Motive Power Completed on Utah Road.**—The change in motive power on the Salt Lake & Ogden Railway, Salt Lake City, Utah, from steam to electricity has been completed and regular service with electric cars is now being given between Salt Lake City and Ogden, a distance of 55 miles. The plans for the electrical equipment of the Salt Lake & Ogden Railway were published in the ELECTRIC RAILWAY JOURNAL of Oct. 2, 1909, page 522.

**Maryland Commission Complete.**—Austin L. Crothers, Governor of Maryland, has appointed Joshua W. Hering, State Comptroller, as the third member of the Public Utilities Commission, and William Cabell Bruce, former city solicitor of Baltimore, as the chief counsel to the commission. Mr. Hering takes the place which was declined by Walter W. Abell. The commission is now complete with the exception of an assistant counsel.

**Financial and Corporate**

**New York Stock and Money Market**

June 7, 1910.

After a week of heavy selling pressure and almost demoralization, due to the threatened adverse action of the administration with regard to the railroads, the stock market to-day suddenly recovered upon the news that the railroad presidents had come to an agreement with President Taft. This extreme sensitiveness on the part of the market indicates that there is little definite sentiment among traders and no investment buying. Traction shares, although affected, were hurt less than railroad and industrial stocks. Interborough-Metropolitan continues to be active at slightly lower prices.

The money market is easier. Quotations to-day were: Call, 2¼ to 2¾ per cent; 90 days, 3½ per cent.

**Other Markets**

In the Philadelphia market, traction shares have suffered less from the pressure to sell than other stocks. The declines have been insignificant.

From the sudden activity and substantial advances of the Elevated shares in the Chicago market yesterday and to-day it seems apparent that substantial progress has been made in the merger project. Chicago Railways Series 2 has also advanced under buying of fair volume.

In the Boston market, Massachusetts Electric issues are still active, and there has also been some trading in Suburban and Elevated. Prices show little change.

In Baltimore, there has been some activity in the stock of the United Railways. Fair-sized blocks have changed hands at about 13. The bonds continue to be active at former prices.

Quotations of various traction securities as compared with last week follow:

|   | May 31. | June 7. |
|---|---------|---------|
| American Railways Company.....                          | 244½    | 244     |
| Aurora, Elgin & Chicago Railroad (common).....          | 57¾     | 57¾     |
| Aurora, Elgin & Chicago Railroad (preferred).....       | 94¼     | 94¼     |
| Boston Elevated Railway.....                            | 2128½   | 2128    |
| Boston & Suburban Electric Companies.....               | 16      | 14      |
| Boston & Suburban Electric Companies (preferred).....   | 74½     | 74½     |
| Boston & Worcester Electric Companies (common).....     | 210½    | 210½    |
| Boston & Worcester Electric Companies (preferred).....  | 42      | 41      |
| Brooklyn Rapid Transit Company.....                     | 787½    | 787½    |
| Brooklyn Rapid Transit Company, 1st pref. conv. 4s..... | 84¼     | 83½     |
| Capital Traction Company, Washington.....               | 2129    | 2131    |
| Chicago City Railway.....                               | 195     | 2195    |
| Chicago & Oak Park Elevated Railroad (common).....      | 3¼      | 3¼      |
| Chicago & Oak Park Elevated Railroad (preferred).....   | 7½      | 7½      |
| Chicago Railways, pteptg., ctf. 1.....                  | 280     | 275     |
| Chicago Railways, pteptg., ctf. 2.....                  | 218     | 219     |
| Chicago Railways, pteptg., ctf. 3.....                  | 210     | 29      |
| Chicago Railways, pteptg., ctf. 4s.....                 | 4       | 25½     |
| Cleveland Railways.....                                 | 91½     | 91½     |
| Consolidated Traction of New Jersey.....                | 276     | 275     |
| Consolidated Traction of N. J. 5 per cent bonds.....    | 2104    | 2104    |
| Detroit United Railway.....                             | 260     | 50½     |
| General Electric Company.....                           | 147     | 143½    |
| Georgia Railway & Electric Company (common).....        | 110¾    | 2110    |
| Georgia Railway & Electric Company (preferred).....     | 88      | 288     |
| Interborough-Metropolitan Company (common).....         | 19½     | 187½    |
| Interborough-Metropolitan Company (preferred).....      | 53¼     | 517½    |
| Interborough-Metropolitan Company (4½s).....            | 80      | 78¾     |
| Kansas City Railway & Light Company (common).....       | 226     | 225     |
| Kansas City Railway & Light Company (preferred).....    | 76      | 267¾    |
| Manhattan Railway.....                                  | 2135    | 2130    |
| Massachusetts Electric Companies (common).....          | 16¾     | 216½    |
| Massachusetts Electric Companies (preferred).....       | 285     | 282½    |
| Metropolitan West Side, Chicago (common).....           | 218     | 18      |
| Metropolitan West Side, Chicago (preferred).....        | 256     | 256     |
| Metropolitan Street Railway.....                        | 15      | 15      |
| Milwaukee Electric Railway & Light (preferred).....     | 110     | 110     |
| North American Company.....                             | 743¾    | 67¾     |
| Northwestern Elevated Railroad (common).....            | 217     | 17      |
| Northwestern Elevated Railroad (preferred).....         | 256     | 256     |
| Philadelphia Company, Pittsburg (common).....           | 249     | 247½    |
| Philadelphia Company, Pittsburg (preferred).....        | 244     | 244     |
| Philadelphia Rapid Transit Company.....                 | 218     | 218½    |
| Philadelphia Traction Company.....                      | 285¾    | 285¾    |
| Public Service Corporation, 5 per cent col. notes.....  | 206     | 96      |
| Public Service Corporation, ctf. s.....                 | 2102½   | 2102    |
| Seattle Electric Company (common).....                  | 2111½   | 2111¾   |
| Seattle Electric Company (preferred).....               | 2102½   | 2102½   |
| South Side Elevated Railroad (Chicago).....             | 258     | 265     |
| Third Avenue Railroad, New York.....                    | 7       | 5½      |
| Toledo Railways & Light Company.....                    | 29¾     | 29¾     |
| Twin City Rapid Transit, Minneapolis (common).....      | 2112    | 2109¾   |
| Union Traction Company, Philadelphia.....               | 247½    | 247½    |
| United Rys. & Electric Company, Baltimore.....          | 12¼     | 213     |
| United Rys. Inv. Co. (common).....                      | 37      | 37      |
| United Rys. Inv. Co. (preferred).....                   | 65      | 65      |
| Washington Ry. & Electric Company (common).....         | 235     | 233¾    |
| Washington Ry. & Electric Company (preferred).....      | 289     | 286½    |
| West End Street Railway, Boston (common).....           | 87¾     | 288     |
| West End Street Railway, Boston (preferred).....        | 102½    | 2102½   |
| Westinghouse Elec. & Mfg. Company.....                  | 62½     | 61¾     |
| Westinghouse Elec. & Mfg. Company (1st pref.).....      | 125     | 125     |

a Asked. \* Last Sale.

### Annual Report of United Railways & Electric Company of Baltimore

Gross earnings of the United Railways & Electric Company, Baltimore, Md., amounted to \$7,209,984 in the calendar year 1909, or an increase of 5.49 per cent over 1908. Operating expenses were 2.08 per cent higher in 1909 than in the previous year. The operations for three years compare as follows:

|   | 1909.       | 1908.       | 1907.       |
|---|-------------|-------------|-------------|
| Miles of track.....                                 | 401         | 401.2       | 396.2       |
| Gross earnings .....                                | \$7,209,984 | \$6,834,802 | \$7,018,081 |
| Operating expenses .....                            | 3,361,872   | 3,293,338   | 3,470,087   |
| Net earnings .....                                  | \$3,848,112 | \$3,541,464 | \$3,547,994 |
| Other income .....                                  | 2,490       |             | 6,505       |
| Total net income.....                               | \$3,850,602 | \$3,544,704 | \$3,554,499 |
| Charges, taxes, etc.....                            | 2,734,188   | 2,637,182   | 2,487,942   |
| Balance .....                                       | \$1,116,414 | \$907,522   | \$1,066,557 |
| Extraordinary expenditures.....                     | 1,013,413   | 813,751     | 1,028,899   |
| Surplus .....                                       | \$103,001   | \$93,771    | \$37,658    |
| Operating expenses—per cent of gross earnings ..... | 46.63       | 48.18       | 49.44       |

The maintenance expenditures included in the operating expenses for 1909 amounted to \$633,881, divided between \$257,995 for maintenance of way and \$375,886 for maintenance of equipment.

William A. House, president of the company, said in part in his report to shareholders:

"The policy of charging to an account designated as 'extraordinary expenditures' the amounts required for rehabilitating the property, as distinguished from ordinary maintenance and repair, has been continued.

"The long pending easement tax litigation was finally decided, June 29, by the Court of Appeals of Maryland, in favor of your company. The litigation presented the question as to whether the street easements valued by the Appeal Tax Court at \$11,214,460 and by the Baltimore City Court at \$2,611,925.81, used and occupied by your company, were subject to valuation and assessment by the Appeal Tax Court for taxation purposes. The court had already held that the easements of the other public service corporations in the city were taxable as such, but none of these corporations paid to the city the tax of 9 per cent on gross receipts, known as the 'park tax' which is paid by your company. It was contended by your company that this 9 per cent gross receipt tax was in lieu of and substitution for any other tax on its park tax paying mileage whether it was termed a franchise or an easement tax. The Court of Appeals fully sustained the company's contention on this point.

"One of the most vital questions at present affecting street railway companies is the rigidity of fares. The seller of a commodity can usually increase its price as the cost of production increases. Even the steam roads can to some extent increase their rates to meet increased cost of transportation. But this has not been true of electric railways.

"For example, at the time of the consolidation of the street railways in Baltimore in 1899, the city charter provided that 3 cents should be charged for transfers. At the Legislative session immediately following the consolidation, this provision was abolished and your company compelled to charge no more than a 5-cent fare for adults and 3 cents for children, with the universal free transfer system added. This was a very serious blow to the financial prospects of your company. How serious will be realized when it appears that in 1909 57,030,556 transfers were used, which at 3 cents each would have increased the company's revenue for that year \$1,710,916.

"It is, of course, true that so great a number of transfers would not have been used if a charge had been made for them, but the figures will serve to indicate the cost to the company of the change in the law. While during the past 10 years your company's fares have been held to this reduction by law, at the same time the carrying cost to your company per passenger has been increasing.

"This condition is by no means peculiar to Baltimore, as throughout the country both the daily press and the trade journals are devoting much space to discussions of the constantly narrowing margin of profit in street railway transportation. A brief comparative review of this subject is, therefore, timely; moreover, it will enable the stockholders and also the public to appreciate fully the expense involved by your company's policy in giving its patrons the best service practicable.

"Within a few years the possible length of a 5-cent ride has been very nearly doubled, and the running time between given points has been materially shortened. In the matter of transfers alone, the number issued in 1909 was nearly four times as great as the number issued in 1900. This growth is very significant in view of the fact that it costs as much to carry a transfer passenger as one paying fare. To give the public this longer ride and quicker transportation, your company has had to increase the expense per passenger for equipment, for maintenance and for power. While the weight of the double-truck car is more than twice that of the single-truck car, yet its seating capacity has not been correspondingly increased. Further, this heavier car demands heavier track structures, more substantial road beds, and a proportionate increase in the power station capacity, as well as in transmission and distribution lines.

"The cost of rolling stock and construction materials has advanced more rapidly, perhaps, than the cost of any other commodities; moreover, the improvement in service has necessitated a more liberal investment in both rolling stock and construction materials, yet the fare remains unchanged. From this there can be but one deduction, and that is that the unit street railway fare with the present high grade of this commodity is relatively too low. This is the great problem that now confronts electric railway companies, and ultimately there will have to be a readjustment of rates in order to solve it.

"Revenue per capita is on the decline; the expense per capita is on a steady and rapid climb.

"These two lines that should pursue a reasonably divergent, or at most parallel course, have been working their way toward a converging point and are now not very far apart.

"One remedy would seem to be to increase the unit rate of fare sufficiently to afford a reasonable return on the investment and enough surplus to take care of depreciation; another, by a contraction of the fare limits; another, by readjusting the transfer system or curtailing this privilege to some extent. Until some such measures are adopted, the conflict between a fixed and rigid price for the commodity sold, transportation, and the greatly increasing cost of producing that commodity and improving its quality will continue to be waged."

The average earnings per car-mile were 26.59 cents, an increase of 1.04 cents, and the cost of service 12.39 cents, an increase of 0.08 cent.

The number of car miles run was 27,124,556, an increase of 360,411 miles.

The total number of revenue passengers carried was 145,601,990, an increase of 7,200,906.

The number of transfers used was 57,030,556, an increase of 2,442,607.

### Chicago Railways Receivership

As the result of a meeting held in Chicago between representatives of the Chicago Railways and the Chicago Consolidated Traction Company, the prospects are that an agreement will be reached by which the difference will be adjusted which was responsible for the appointment of receivers for the Chicago Railways. Another meeting of the representatives of the companies has been arranged to be held in New York during the week ended June 11, 1910. The matter to be adjusted is the judgment for \$1,344,000 against the Chicago Railways rendered by Judge Ball, of the Superior Court, based on claims by bondholders of the Chicago Consolidated Company, which it was claimed were guaranteed by the Chicago Union Traction Company. Peter S. Grosscup, Judge of the Federal Court, who appointed John M. Roach, president and general manager of the Chicago Railways, and Henry A. Blair, chairman of the board of directors of the company, receivers of the property, has asked for immediate and effective action aimed toward a reorganization of the Consolidated Traction Company. Judge Grosscup has said in part:

"June 20 is three weeks off. Between now and then, if the men charged with responsibility get together at once and in earnest, we can know whether complete agreement is possible, and if not what specific matters are left open. If, on June 20, it is seen that no agreement can be reached, or only a partial agreement, leaving specific matters still open, let the matter still open go at once to an umpire."

to be named by the parties, or some one for them, to be taken up at once by such umpire and disposed of. In other words, let there be immediate action and effective action.

"It is possible that some of the interests may prove recalcitrant. If the Chicago Railways, for instance, should be the recalcitrant, I would think over carefully whether the court, under such circumstances, owed any further protection to that interest; or if the recalcitrant was one or more of the several interests making up the Consolidated Traction Company, I would think over carefully if the court ought to stand longer between that interest and the consequences that would follow its abandonment; or if the recalcitrant were some of the bondholders who have recently obtained judgment, I would think over carefully if it were not my duty to put them at once to their election either to stand on their judgment or on their opportunity to participate in the reorganization—one of these only, not both."

**Federal Light & Traction Company, New York, N. Y.**—The Federal Light & Traction Company, organized in the interest of Harrison Williams, Sanderson & Porter, James B. Colgate & Company, and others, has been financed. The company is incorporated under the laws of New York, with an authorized capital stock of \$11,000,000, of which half is to be 6 per cent preferred stock. There are no bonds. Of the stock, \$2,500,000 of preferred and \$4,500,000 of common stock have been issued. The Federal Light & Traction Company has secured a controlling interest in the following companies: Grays Harbor Railway & Light Company, Aberdeen, Wash.; Sheridan Electric Light & Power Company, Sheridan, Wyo.; Rawlins Electric Light & Fuel Company, Rawlins, Wyo.; Montrose Electric Light & Power Company, Montrose, Col.; Hobart Light & Power Company, Hobart, Okla.; Albuquerque Electric Power Company, Albuquerque, N. M.; Albuquerque Gas, Electric Light & Power Company, Albuquerque, N. M.; Las Vegas Light & Power Company, Las Vegas, N. M.; Las Vegas Transit Company, Las Vegas, N. M.; Tucson Gas, Electric Light & Power Company, Tucson, Ariz.; Tucson Rapid Transit Company, Tucson, Ariz.

**Fort Dodge, Des Moines & Southern Railroad, Fort Dodge, Ia.**—Homer Loring, president of the Fort Dodge, Des Moines & Southern Railroad, and Parley Sheldon, Ames, Ia., were appointed receivers of the company on June 4, 1910.

**Holmesburg, Tacony & Frankford Electric Railway, Tacony, Pa.**—The property of the Holmesburg, Tacony & Frankford Electric Railway was sold for \$375,000 at foreclosure sale on June 1, 1910, to George B. Atlee & Company, Philadelphia, Pa., representing a syndicate who outbid the committee of bondholders represented by W. L. Haehnlen, of Charles Fearon & Company. The upset price of the property was \$330,000. Atlee & Company have issued a statement in which they say in part: "The property was purchased by a syndicate composed of Jacob S. Disston, president of the Tacony Trust Company; Meyer Schamberg, president of the West Chester Street Railway; William L. Allen and George B. Atlee & Company. George B. Atlee & Company are syndicate managers. Arrangements had been made with the Disston committee whereby, if the syndicate was the successful bidder, they were to receive bond for bond and 25 per cent of stock in a new corporation having \$400,000 bonds issued on the same property and \$100,000 reserved for extensions and betterments and \$500,000 of stock. Holders of bonds not deposited with our committee will probably be allowed to participate in the reorganization. This year the company should earn about \$120,000 gross, and with the decreased expenses which will follow the expenditure of about \$70,000, the net earnings should approximate between \$40,000 and \$50,000, or sufficient to pay interest on the proposed bonds and leave between 3 per cent and 5 per cent for the new stock."

**Interborough-Metropolitan Company, New York, N. Y.**—The Interborough-Metropolitan Company has arranged to extend, until June 1, 1911, at the same rate of interest, the \$2,250,000 of 6 per cent collateral trust six months' notes, due June 1, 1910. These notes are a part of the \$8,000,000 of 6 per cent six months' collateral notes issued on May 27, 1907, by the company to provide the New York City Rail-

way with funds to electrify various horse car lines and to meet the cost of other improvements then contemplated. It was the original intention of the Interborough-Metropolitan Company to take up these six months' notes at their maturity by issuing in their stead 5 per cent three-year notes. At the maturity of the notes, however, approximately one-half were paid off and the remainder was renewed for six months.

**Lancaster & Southern Street Railway, Lancaster, Pa.**—A receiver has been appointed for the Lancaster & Southern Street Railway.

**Metropolitan Street Railway, New York, N. Y.**—In accordance with the mandate of the United States Circuit Court of Appeals, Judge Lacombe of the U. S. Circuit Court has signed an order authorizing Adrian H. Joline and Douglas Robinson, receivers of the Metropolitan Street Railway, to expend \$394,205 for improvements on a portion of the leased lines of the Metropolitan Street Railway. This mandate of the Court of Appeals is in confirmation of an order of Judge Lacombe signed in January, 1910, from which the Guaranty Trust Company and Morton Trust Company appealed. The amount is to be paid out of income.

**Mineral Wells (Tex.) Electric System.**—S. B. Cantey, Ft. Worth, Tex., and others, have secured a controlling interest in the Mineral Wells Electric Company by the purchase of the holdings of D. T. Bomar in the company.

**Philadelphia & Chester Railway, Philadelphia, Pa.**—The property of the Philadelphia & Chester Railway was sold at foreclosure on May 31, 1910, to L. A. Isenthal, A. W. From and R. I. D. Ashbridge, representing the bondholders' committee, for \$350,000, which was \$125,000 more than the upset price. The Philadelphia & Chester Railway was a part of the system of the Interstate Railways.

**Southwestern Street Railway, Philadelphia, Pa.**—The sale of the property of the Southwestern Street Railway under foreclosure has been adjourned until June 23, 1910.

**Terre Haute, Indianapolis & Eastern Traction Company, Indianapolis, Ind.**—Drexel & Company, Philadelphia, Pa.; Lee, Higginson & Company, New York, N. Y.; Boston, Mass., and Chicago, Ill., and Estabrook & Co., Boston, Mass., and New York, N. Y., having sold more than \$3,750,000 of the \$5,000,000 of 5 per cent bonds of the Terre Haute, Indianapolis & Eastern Traction Company, which they purchased recently, are offering at 95 and interest, yielding 5.30 per cent, the remainder of the bonds. The bonds are dated April 1, 1910, and are due April 1, 1945, but are callable as a whole on or after April 1, 1915, at 105 and interest, or in part for sinking fund purposes only at 102½ and interest on or after April 1, 1911.

**Virginia Railway & Power Company, Richmond, Ind.**—The Virginia Railway & Power Company has declared an initial dividend of 1½ per cent on its \$4,700,000 of preferred stock, payable to stockholders of record on July 1, 1910.

**Western Ohio Railway, Lima, Ohio.**—More than \$1,200,000 of the bonds of the Western Ohio Railway have been deposited under the pooling arrangement which was recently arranged for. The committee desires to secure the deposit of at least \$1,500,000 of the bonds. It is stated that the option of 89 will probably be accepted and that the bonds will be sold shortly after they are pooled. If the option of Hayden, Miller & Company, Cleveland, at 89 on the bonds is not exercised, the committee may sell them to someone else, but at a price not less than 89. The receipts covering the deposit of bonds have been listed upon the Cleveland Stock Exchange. The Western Ohio Railroad has been incorporated to lease the Western Ohio Railway, obligating itself to pay the interest on the bonds of the Western Ohio Railway and the principal at maturity and dividends on the present preferred stock and on the possible issue of first preferred 7 per cent stock into which the second mortgage 6 per cent bonds are convertible. The holders of common stock of the Western Ohio Railway will have the privilege of exchanging it for common stock of the Western Ohio Railroad, however, on the basis of three shares of the former for one of the latter. The charter of the Western Ohio Railroad authorizes the company to construct a line between Toledo and Dayton. The present northern terminus of the Western Ohio Railway is at Findlay.

# Traffic and Transportation

## Power Brake Measure in Ohio

The following is the text of the measure passed by the Legislature of Ohio and signed by Governor Harmon, which provides that cars of electric railways operating in Ohio shall be equipped with power brakes prior to Jan. 1, 1913:

"Section 1.—That from and after Jan. 1, 1913, it shall be unlawful in the State of Ohio for any corporation, company, person, or persons owning or controlling the same, to operate, use or run, or permit to be run, used or operated for carrying passengers or freight on an urban or interurban railroad or street car line, any car propelled by electricity not equipped, in addition to the hand brake in use on such car, with an air or electric power brake or apparatus capable of applying to all the brake shoes or wheels of such car a maximum permissible braking pressure, and of automatically reducing such braking pressure, as the speed of the car decreases. Fifty per cent of such cars to be so equipped prior to Jan. 1, 1911, and 75 per cent prior to Jan. 1, 1912. It shall be the duty of the Railroad Commission of Ohio to enforce this act.

"Section 2.—Any corporation, company, person or persons operating, using or running any car, or permitting any car to be operated, used or run, in violation of any of the provisions of this act, shall be liable to a penalty of \$100 for each such violation, to be recovered in a suit or suits which it shall be the duty of the prosecuting attorney of any county where such violation shall have been committed to prosecute; such suit or suits to be brought by such prosecuting attorney upon verified information being lodged with him of such violation having occurred."

**Accident on New Haven Railroad.**—The last two cars of an express train over the New York, New Haven & Hartford Railroad from Boston, which was due in the Grand Central Station, New York, N. Y., on June 6, 1910, at 3:50 p. m., left the rails at a junction near New Rochelle, N. Y., in the electric zone, and one of the cars was turned over. None of the passengers was seriously injured.

**Accident on Detroit, Monroe & Toledo Short Line Railway.**—A limited train on the Detroit, Monroe & Toledo Short Line Railway, Monroe, Mich., collided with a local train at a siding about five miles north of Toledo, Ohio, on June 4, 1910, and more than 20 persons were slightly injured. Traffic over the line at the time of the accident was particularly heavy on account of the ceremonies in Monroe which attended the unveiling of the monument to General Custer in that city.

**Central Electric Traffic Association Files Tariffs.**—The Central Electric Traffic Association has filed its new Joint and Local Freight Tariff No. 1, which covers the Official Classification No. 36, with the Interstate Commerce Commission, the Indiana Railroad Commission, the Michigan Railroad Commission, the Ohio Railroad Commission, the Illinois Railroad & Warehouse Commission and the Kentucky Railroad Commission. Hitherto the classification has always been filed by the companies separately.

**Accidents in Chicago.**—The City Attorney of Chicago has issued a report of the street accidents during the 11 months from July 1, 1909, to May 31, 1910. Street cars are charged with 110 fatalities. Of these 14 occurred during May, in which there also were 322 personal injuries. Twenty children under the age of 10 years who were playing in the street were injured; 39 were hurt when getting on or off moving cars, and 84 others were hurt in crossing from one side of the street to the other after alighting from cars.

**Arrest for Misrepresentation in Rochester.**—The New York State Railways has been active in prosecuting men who have secured employment with the company in violation of Section 939 of the Penal Law of the State, which forbids misrepresentation in securing employment. As a result of a recent prosecution of this kind on a warrant sworn out by Wm. C. Callaghan, superintendent of transportation of the Rochester lines, an employee named Benetser was recently fined \$50. The information against him alleged that he had worked on the street railway sys-

tems in Buffalo and other cities and also previously on the Rochester lines. No financial irregularity was charged.

**Arbitration in Connecticut.**—The following announcement was made in New Haven, Conn., on June 1, 1910, in the interest of the Connecticut Company, in regard to the subject of the readjustment of the terms of service of the motormen and conductors in the employ of the company: "As arbitration of the wage schedule was agreed upon at the last conference of the trolley men's committee with President Mellen, it is unlikely that any further conferences will be arranged, as the discussion will hereafter be made before the arbitrators. A sub-committee was appointed by the men. This committee is in touch with the officers of the company arranging the arbitration details. As soon as these are agreed upon they will be given to the press."

**Complaint to Interstate Commerce Commission Against Electric Railways.**—R. W. Sylvester, Prof. Thomas H. Spence, president and vice-president of the Maryland Agricultural College; H. J. Patterson, director of the Maryland Agricultural Experiment Station; George Gaylor and A. J. Wiegman, Berwyn, Md.; Judge Filmore Beall and C. A. Fox, Beltsville, Md.; and others have complained to the Interstate Commerce Commission that the rates for transportation charged residents of Maryland who use the cars of the Washington, Berwyn & Laurel Electric Railway and the City & Suburban Railway are excessive and exorbitant. They also allege that the defendant electric railways are unfair and unjust in their dealings with passengers from Laurel to Washington, D. C., and return, and that the present rates charged and the conditions imposed work a hardship upon the patrons of the road.

**Funeral Car Service in Chicago.**—The Calumet & South Chicago Railway, in connection with the Chicago City Railway and the Hammond, Whiting & East Chicago Electric Railway, has issued a 12-page booklet, in which the funeral car service is described, which the company offers from points on the Chicago City Railway and the Hammond, Whiting & East Chicago Electric Railway to four cemeteries located south and southwest of the city. The booklet illustrates funeral car No. 1, which was described in the *ELECTRIC RAILWAY JOURNAL* of April 16, 1910, page 714. A double-page map shows the surface lines in Chicago south of the loop district. The charges for funeral car service from any point on the three railways to any one of the four cemeteries vary between \$30 and \$40 for a round trip. On the return trip transfers are issued to the surface cars. Arrangements for funeral car service may be made through undertakers.

**Souvenir of Willow Grove Park.**—The Philadelphia (Pa.) Rapid Transit Company has issued an illustrated souvenir of Willow Grove Park for 1910, which contains 48 pages. Willow Grove Park was formally opened 15 years ago. It has always held a peculiar position in the world of music in Philadelphia, bringing together the interval between the indoor musical seasons. This year the company has arranged for the appearance of Conway and his band, Fred A. Stock and the Theodore Thomas Orchestra, Victor Herbert and his orchestra and Sousa and his band. With the exception of Conway's Band, which returns after an absence of several years, the concert arrangements are identical with those of last season. In addition to the musical attractions at the park for the summer, the souvenir describes the amusement features. They include boating and the attractions afforded at the Casino, the rustic pavilion, the automobile race track, etc.

**Summer Schedule on Inland Empire System.**—The summer schedule went into effect on the Spokane & Inland Empire Railroad, Spokane, Wash., on May 28, 1910, and more trains are being operated to Liberty, Cœur d'Alene and Hayden Lakes than ever before. The service to Liberty Lake is separate from that to Cœur d'Alene. The schedule on the main line to Cœur d'Alene calls for 11 trains. The work of double-tracking the Cœur d'Alene division between Spokane and Spokane Bridge, a distance of 19 miles, is nearing completion, and will enable the company to reduce the running time from Cœur d'Alene to Broadway Junction, Spokane, to 42 minutes. The "Campers' Limited Train," which proved popular with summer residents at Hayden Lake in seasons past, leaves Spokane at 4:30 p. m. daily, except Sunday, and arrives at Hayden shortly before 6 p. m. It leaves the lake at 7:35 a. m. and arrives in Spokane at

8:57 a. m. Simultaneous with the summer schedule the special excursion rates for week-end and Sunday trips to the lakes became effective.

**Accident Fakir Arrested.**—By an arrest made in New York the police believe they have stopped the operations of a successful collector of fraudulent damages against railroads. The prisoner is Mrs. Anna A. Strula, and the arrest was secured largely by F. L. Arnold, secretary of the Alliance Against Accident Fraud of New York. According to Mr. Arnold, the woman was accustomed to allege that she had been hurt by a jar due to the sudden stopping of a train or car, but in a majority of instances banana peels or grape skins would be found under her after she had been picked up, seemingly in great pain after a fall. Negligence in leaving such slippery things on the steps or platforms would then be made the basis of a suit. The woman suffered from hernia, and claimed that this trouble was brought on by each accident. Among the companies from which she is said to have collected money are: Public Service Railway, \$100; New Jersey & Hudson River Railway & Ferry Company, \$100; Brooklyn Rapid Transit Company, \$50, and Pennsylvania Railroad, \$1,000. Other steam railroads paid sums varying from \$50 to \$250. Other electric railway companies against whom she is said to have brought claims, but to have collected nothing are: Boston Elevated Railway, Atlantic Coast Electric Railway and the Manhattan Railway, New York.

**Increase in Wages in Cincinnati.**—W. Kesley Schoepf, president of the Cincinnati (Ohio) Traction Company and the Ohio Electric Railway, has announced an increase in the wages of the platform men of the companies. In the city service no change has been made for the first year, during which the men receive 20 cents an hour. For the second and third years wages are advanced from 20 cents to 21 cents; fourth, fifth and sixth years, from 21 cents to 22 cents; seventh, eighth, ninth and tenth years, from 22 cents to 23 cents; eleventh, twelfth, thirteenth, fourteenth and fifteenth years, from 22 cents to 24 cents; sixteenth year and thereafter, 22 cents to 25 cents; overtime, 25 cents. The advances on the Ohio Electric Railway follow: First six months, from 18 cents to 20 cents; second six months, 19 cents to 20 cents; second year, 20 cents to 21 cents; third year, 21 cents to 22 cents; fourth year, 22 cents to 23 cents; fifth year, 23 cents to 24 cents; sixth year, 25 cents, no change; seventh year and thereafter, 25 cents to 26 cents. On the town and city systems operated by the Ohio Electric Railway, such as Dayton, Hamilton, Zanesville, Newark, Lima and Bellefontaine, the advances follow: First year, 17 cents to 18 cents; second year, 18 cents to 19 cents; third year, 18½ cents to 19½ cents; fourth year, 19 cents to 20 cents; fifth year, 20 cents to 21 cents; sixth year, 20 cents to 22 cents; seventh year and thereafter, 20 cents to 23 cents.

**New Schedule on the Rochester, Syracuse & Eastern Railroad.**—A new schedule has been inaugurated on the Rochester, Syracuse & Eastern Railroad under which the 82.6 miles between Rochester and Syracuse are covered by the company's limited trains, which make 12 station stops and the necessary slow-downs while passing through villages, in 2 hours and 37 minutes. Of this time 30 minutes are consumed in getting out of one of the terminal cities and into the other, a distance of 7 miles, so that the running time for the 79.8 miles between the city lines of the two terminals is 2 hours and 7 minutes. The first limited cars over the Rochester, Syracuse & Eastern Railroad each day leave Rochester and Syracuse at 7 a. m. and every other hour on the odd hour up to and including 9 p. m. On June 3, 1910, a particularly fast run was made on the Rochester, Syracuse & Eastern Railroad by a special car in which were C. D. Beebe, general manager of the company; William Nottingham, general counsel; H. J. Clark, assistant to the president, and some visitors from Toronto, Ont. The car made a trip of 167.2 miles from the Syracuse terminal to Culver Road at the Rochester City line and return in 4 hours and 15 minutes, making 10 stops going and coming. Of this time 30 minutes were spent in making the 8.8 miles between the Syracuse terminal and Lake Shore Junction. The distance from Lake Shore Junction to Culver Road is 79.2 miles, and westbound it was made in 1 hour and 53 minutes and eastbound in 1 hour and 52 minutes.

## Personal Mention

**Mr. P. N. Peterson** has been appointed master mechanic of the Beaver Valley Traction Company, Beaver Falls, Pa.

**Mr. Kade Neiswender** has resigned as superintendent of the Marion Railway, Light & Power Company, Marion, Ohio.

**Mr. R. C. Gillis** has been elected president of the Los Angeles-Pacific Company, Los Angeles, Cal., to succeed Mr. E. P. Clark, resigned.

**Mr. F. C. Rapp** has resigned as master mechanic of the Atlantic City & Shore Railroad, Atlantic City, N. J., to accept a position in the West.

**Mr. John Boyer** has been appointed superintendent of the Marion Railway, Light & Power Company, Marion, Ohio, to succeed Mr. Kade Neiswender, resigned.

**Mr. M. L. Hibbard** has been appointed assistant general manager and resident engineer of the San Antonio (Tex.) Traction Company to succeed Mr. W. H. Thomson, resigned.

**Mr. T. S. Adams** has resigned as district master mechanic of the Public Service Railway at Newark, N. J., to become master mechanic of the Atlantic City & Shore Railroad, Atlantic City, N. J.

**Mr. Ira C. Walborn** has resigned from the Eastern Pennsylvania Railways, Pottsville, Pa., to become assistant electrical superintendent of the Eastern Pennsylvania Light, Heat & Power Company, Pottsville, Pa.

**Mr. Charles E. Taylor** has resigned as general manager and electrical engineer of the Edmonton (Alta.) Electric Railway, and the management of the property is now in the hands of the three railway commissioners.

**Mr. James H. Smeaton**, who has been in charge of the Lac du Bonnet station of the Winnipeg (Man.) Electric Railway for the last four years, has become connected with the Pennsylvania Water & Power Company, McCall Ferry, Pa.

**Mr. James F. Shaw**, president of the American Street & Interurban Railway Association, is planning to sail on the *Baltic* on June 11, 1910, for a European trip of four or five weeks. He expects to visit England, France, Germany and Belgium, and will inspect the electric railway practice in those countries.

**Mr. E. P. Maxwell** has been appointed assistant general manager of the Sterling, Dixon & Eastern Electric Railway and the Lee County Lighting Company, and will have his office at Dixon, Ill. Mr. Maxwell was formerly manager of the Dixon Lighting Company, which was absorbed by the Lee County Lighting Company several years ago. He has managed the gas and electric department of the Eastern Wisconsin Railway & Light Company at Fond du Lac recently.

**Mr. A. M. Courtney**, formerly foreman of the track department of the San Antonio (Tex.) Traction Company, has been appointed superintendent of maintenance of way of the company, and Mr. George H. Cushman, superintendent of the electrical department of the San Antonio Gas & Electric Company, has been appointed superintendent of overhead work of the San Antonio Traction Company. Mr. Courtney and Mr. Cushman will succeed to the duties performed by J. J. King, whose death was noted in the *ELECTRIC RAILWAY JOURNAL* of May 28, 1910.

**Mr. J. P. Pulliam**, who has recently been manager of the railway department of the Eastern Wisconsin Railway & Light Company, Fond du Lac, Wis., and the Wisconsin Electric Railway, Oshkosh, Wis., and assistant general manager of the companies in charge in the absence of Mr. Clement C. Smith, has been appointed general manager of the Eastern Wisconsin Railway & Light Company and general manager of the Wisconsin Electric Railway, with headquarters at Fond du Lac. Mr. Pulliam was formerly general superintendent of the Wisconsin Electric Railway and the Eastern Wisconsin Railway & Light Company in charge of operation.

**Mr. Joshua W. Hering**, State Comptroller of Maryland, has been appointed a member of the Public Utilities Commission of Maryland by Governor Crothers, of that

State, taking the place that was declined by Mr. W. W. Abell. Mr. Hering is a banker of Carroll County. He formerly represented Carroll County in the State Senate. In 1890 he was elected State Comptroller and was re-elected in 1901. From 1903 to 1907 he did not hold public office, but in the latter year he was elected comptroller on the ticket headed by Governor Crothers, and was re-elected in November, 1909. Mr. Hering has qualified as a member of the commission.

Mr. E. P. Clark has resigned as president of the Los Angeles-Pacific Company, Los Angeles, Cal., and Mr. R. C. Gillis has been elected to succeed him. The directors of the company passed the following resolution expressing their regret at the retirement of Mr. Clark: "Resolved, That we hereby express our appreciation of the long-continued, faithful and efficient service of our retiring president, Mr. E. P. Clark, who has presented his resignation, and in accepting his resignation, which he voluntarily presents as incident to the sale of his interest in the stock of our company. We desire that this appreciation be spread upon the minutes of this meeting and a copy of this resolution, properly endorsed, be delivered to Mr. E. P. Clark."

Prof. Albert S. Richey has been engaged by the Boston & Northern Street Railway and the Old Colony Street Railway to make a scientific study of the schedules of these companies for the purpose of determining the most economical speeds, headways, etc., on the various divisions north and south of Boston, comprising about 950 miles of track. Professor Richey has been professor of electric railway engineering at Worcester Polytechnic Institute since 1905, previous to which time he was chief engineer of the Indiana Union Traction Company. Since locating in Worcester he has acted as consulting engineer for a number of Eastern roads. Professor Richey will continue his connection with Worcester Polytechnic Institute, and will divide his time between Worcester and his Boston office at 84 State Street.

Miss S. M. Rothermel has resigned as assistant secretary of the Wisconsin Electric Railway, Oshkosh, Wis., to become confidential secretary to Mr. E. E. Downs, general manager of the Chicago & Milwaukee Electric Railroad, Highwood, Ill. Miss Rothermel was secretary of the Citizens' Traction Company at Kalamazoo, Mich., but resigned in October, 1897, to become connected with the Citizens' Traction Company, Oshkosh, Wis. In 1900 the Citizens' Traction Company was reorganized as the Winnebago Traction Company and Miss Rothermel was made treasurer and assistant secretary of the company, in which capacity she continued until July 6, 1907, when the company went into the hands of the receiver. During the receivership Miss Rothermel acted as chief clerk. Upon the organization of the Wisconsin Electric Railway as the successor to the Winnebago Traction Company in August, 1908, Miss Rothermel was made assistant secretary of the company.

Mr. J. M. Yount has resigned as master mechanic of the Union Railway, New York, N. Y., to become master mechanic of the United Railroads, San Francisco, Cal., to succeed Mr. F. F. Bodler, who resigned some time ago. Mr. Yount was graduated from Purdue University with the degree of electrical engineer. He began his street railway career with the Citizens' Street Railway, Indianapolis, Ind., immediately upon matriculating. In 1898 he entered the employ of the Metropolitan Street Railway, New York, N. Y., with which he served about a year. Mr. Yount then became connected with the Jersey City, Hoboken & Paterson Railway, Paterson, N. J., as assistant to Mr. H. H. Adams, who is now superintendent of rolling stock and equipment of the Metropolitan Street Railway, New York, N. Y. Subsequently he was appointed master mechanic of the North Jersey Street Railway, which was controlled by the same interests that owned the Jersey City, Hoboken & Paterson Railway. When the Public Service Corporation of New Jersey was formed in 1902 Mr. Yount was made superintendent of rolling stock of the company in charge of the North Jersey division of that company. In April, 1906, Mr. Yount was appointed assistant master mechanic of the Pittsburgh (Pa.) Railways. Later he accepted the position of assistant to Mr. W. D. Wright, master mechanic of the Rhode Island Company, operating the electric railways in Providence, R. I.

## Construction News

Construction News Notes are classified under each heading alphabetically by States.

An asterisk (\*) indicates a project not previously reported.

### RECENT INCORPORATIONS

\***Brooklyn & Jamaica Bay Railway, Brooklyn, N. Y.**—Incorporated in New York to build a 3-mile electric railway from Montauk Avenue and Liberty Avenue, Brooklyn, to Jamaica Bay. Capital stock, \$100,000. Directors: H. J. Subers, Ashbourne, Pa.; N. S. Easton, Daniel Von Wein and E. S. Churchill, New York, and F. B. Lupten, Brooklyn.

\***Rochester Belt Line Railroad, Rochester, N. Y.**—Incorporated in New York to build a 15-mile freight belt line around Rochester, connecting up the freight transfer points of the New York Central & Hudson River Railroad, the Lehigh Valley Railroad, the Buffalo, Lockport & Pittsburgh Railway, the West Shore Railroad, the Pennsylvania Lines, the Erie Railroad, the Western New York & Pennsylvania Railroad, all steam lines as well as all the interurban electric lines. It will operate by both steam and electricity. Capital stock, \$2,500,000. Directors: Frank A. Dudley, Niagara Falls; Henry C. Brewster, John F. Alden, Rochester, and C. D. Beebe.

\***Fifth Avenue Railway & Light Company, Columbus, Ohio.**—Incorporated in Ohio to build a crosstown street railway in Columbus. Capital stock, \$10,000. Incorporators: A. C. Wolfe, E. W. Yantes, W. Cushing, J. E. Fippen and J. W. Jennings, all of Columbus.

\***Western Ohio Railroad, Lima, Ohio.**—Incorporated in Ohio to build an electric railway to connect Lucas, Wood, Hancock, Allen, Auglaize, Shelby, Miami and Montgomery Counties with branches from Wapakoneta to Celina and from St. Mary's to Lorain. Capital stock, \$10,000. Incorporators: Frank H. Ginn, Albert E. Green, G. M. Cummings, Grover Higgins and John M. Garfield.

\***Tower City, Reiner City & Johnstown Street Railway, Johnstown, Pa.**—Chartered in Pennsylvania to build a 3-mile railway from the terminus of the Lykens & Williams Valley Street Railway in Dauphin County to Johnstown. Capital stock, \$100,000. Incorporators: Joseph W. Moyer, Pottsville, president; W. E. Harrington and John H. Williams, Pottsville, A. B. Greenshield, Philadelphia; Edgar D. Rank, Williamstown; N. D. Yoder, Hegins, and J. F. Romberger, Berrysburg.

**Scranton & Lake Ariel Railway, Scranton, Pa.**—Incorporated in Pennsylvania to build a 20-mile electric railway to connect Scranton and Lake Ariel. Construction will begin as soon as a franchise is obtained in Scranton. Incorporators: John J. Brown, Valentine Bliss, W. J. Davis, John J. Holland, F. W. Wollerton, E. J. Lynett and A. G. Ruthersford. [E. R. J., May 14, '10.]

\***Sylvan Dell Park Company, Williamsport, Pa.**—Chartered in Pennsylvania to build a 3/4-mile railway from South Williamsport to Sylvan Dell Park, Williamsport. Capital stock, \$24,000. H. W. Whitehead, president.

\***Mineral Wells (Tex.) Electric Company.**—Chartered in Louisiana to build a street railway in Mineral Wells. Capital stock, \$350,000. Officers: S. B. Canty, Fort Worth, president; N. C. Blanchard, vice-president, and W. C. Forbes, Fort Worth, secretary.

\***Vancouver, Canias & Washougal Traction Company, Vancouver, Wash.**—Application for a charter has been made by this company in Washington to build an electric railway from Vancouver to Washougal. Capital stock, \$100,000. Incorporators: H. C. Phillips, W. D. Smith and E. M. Rands.

\***Burnsville, Glenville & Parkersburg Company, Parkersburg, W. Va.**—Incorporated in West Virginia to build an electric railway from Burnsville to Parkersburg, via Glenville. Capital stock, \$10,000. Incorporators: N. J. Bartlett and J. B. Supler, Clarksburg; L. W. Bartlett, C. E. Hines and Henry Sipes, Buckhannon, W. Va.

### FRANCHISES

**Bakersfield, Cal.**—The Power, Transit & Light Company has asked the Board of Trustees for a 50-year franchise to build a single or double-track railway in Bakersfield.



**New Albany, Ind.**—The Louisville & Northern Railway & Lighting Company, New Albany, has been granted a franchise to build a railway on North State Street from the present terminus of its line to the city limits.

**Menominee, Mich.**—The Menominee & Marinette Light & Traction Company has asked the Council for a franchise to extend its line on Taylor Avenue to Henes Park, in Menominee.

**Minneapolis, Minn.**—The Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company has asked the Council for a franchise to extend its lines to the center of Minneapolis. M. W. Savage, president.

**Cincinnati, Ohio.**—The Cincinnati Union Depot Terminal Company, Cincinnati, has asked the City Council for a franchise for the use of certain streets and crossings in connection with the construction of the terminal which the company contemplates erecting. [E. R. J., May 28, '10.]

**Springfield, Ore.**—The Portland, Eugene & Eastern Railway, Eugene, has been granted a franchise by the Council to build a railway in Springfield with the stipulation that within a year cars shall be operating over all of Mill Street to the city limits.

**Johnstown, Pa.**—The Johnstown Passenger Railway has been granted a franchise to build an extension to Southmont.

**McKeesport, Pa.**—The Pittsburgh, McKeesport & Westmoreland Railway has asked the Council for a franchise to extend its railway in McKeesport.

**New Castle, Pa.**—The New Castle & Beaver Valley Street Railway, Beaver Falls, has been granted an extension of its franchise for six months in which to begin work on its 22-mile railway to connect New Castle and Beaver Falls. [E. R. J., May 21, '10.]

**Scranton, Pa.**—The Scranton & Lake Ariel Railway will soon ask the Council for a franchise to build a railway over certain streets in Scranton. This is part of a plan to connect Lake Ariel and Scranton. [E. R. J., May 14, '10.]

**Memphis, Tenn.**—The Memphis Street Railway has been granted a franchise by the Council to build a crosstown line in Memphis.

**\*Austin, Tex.**—C. V. Burkhead, San Antonio, N. A. Dawson and James T. Priest, South Austin, have asked the Council for a franchise to build a street railway in South Austin.

**\*Port Orchard, Wash.**—The Bainbridge Development Company has asked the County Commissioners for a franchise to construct an electric railway on Bainbridge Island, to connect with a ferry from Eagle Harbor to Seattle.

#### TRACK AND ROADWAY

**Birmingham & Edgewood Electric Railway, Birmingham, Ala.**—This company has let the contract to Furtuanger & Smith for building its 3½-mile extension from the Birmingham base of the Red Mountain through Red Mountain Cut, thence across Shades Valley to Shades Mountain.

**\*Esquimalt & Nanaimo Railway, Vancouver, B. C.**—This company is said to be surveying a 12-mile route between Oyster River on the east coast of Vancouver Island and the north of Comox Harbor to Campbell River, and it is probable that the location of the line to some point on Quatsino Sound will be undertaken in the near future.

**Fresno (Cal.) Traction Company.**—This company has nearly completed the double tracking of its lines within the city limits of Fresno. Work on the double tracking of its railway to Zapp's Park will be started soon.

**Pacific Electric Railway, Los Angeles, Cal.**—This company expects to build a 6-mile railway between Wilmington and Long Beach. The line will connect with the Pacific Electric Railway at Wilmington and at Long Beach.

**Vallejo & Northern Railway, Vallejo, Cal.**—The directors of this company, which proposes to build a railway to connect Vallejo, Cordelia, Suisan, Vacaville and Sacramento, will hold a meeting July 28, when action will be taken toward increasing its capital stock from \$2,500,000 to \$10,000,000. [E. R. J., April 9, '10.]

**Bridgeport & Danbury Electric Railway, Bridgeport, Conn.**—This company is reported to be surveying, and is

considering the construction of a 20-mile interurban railway this summer to connect Bridgeport, Trumbull, Monroe, Newton, Bethel and Danbury. Capital stock, \$1,500,000. Morton F. Plant, New London, Conn., is interested. [E. R. J., Aug. 24, '07.]

**\*Burley, Idaho.**—Isaac N. Powell, Chicago; Henry C. Yarin, Charles Uhrich and James R. Van Cleave, Springfield, are reported to be interested in promoting an electric railway between Albion and Burley.

**\*Mattoon, Ill.**—Messrs. Knollenberg and Lauber are said to be interested in a plan to build an interurban railway to connect Quincy, Springfield, Shelbyville, Mattoon, Charleston and Paris.

**Oil Belt Traction Company, Oblong, Ill.**—This company has awarded the contract to McCann Brothers, Murphysboro, for building its proposed 12-mile railway between Bridgeport and Oblong. N. L. Upson, manager. [E. R. J., Sept. 11, '09.]

**St. Joseph Valley Traction Company, Elkhart, Ind.**—This company has started work on its extension to Metz. The interurban connection between Elkhart and Bristol is nearly completed, and will bring Elkhart into touch with Toledo and other important centers.

**Albia (Ia.) Interurban Railway.**—This company has authorized a \$300,000 bond issue to build a 12-mile extension from Albia to Buxton. Engineering and construction of the line are in charge of the Engineering, Construction & Securities Company, Chicago, Ill.

**Iowa City Electric Railway, Iowa City, Ia.**—This company has been organized to build a railway to Runnell's addition this summer, and another to the city park. Capital stock authorized, \$100,000, of which the full amount is said to have been subscribed. Officers: J. O. Schulze, president; John H. Rohret, vice-president; D. A. Reese, secretary and treasurer. [E. R. J., April 24, '09.]

**\*Wichita, Kan.**—R. Iams, Clay Center, Kan., is said to be interested in a project to build a 200-mile interurban railway from Beatrice, Neb., to Wichita, Kan.

**Dowagiac (Mich.) Railway.**—Press reports state that this company has started construction of its 10-mile railway between Eau Claire and Dowagiac. H. C. Mann, Benton Harbor, Mich., general manager. [E. R. J., Dec. 12, '08.]

**St. Louis, St. Charles & Northern Traction Company, Mexico, Mo.**—This company has started surveys from Laddonia to Troy and St. Charles, a distance of 90 miles, for its proposed electric railway from St. Charles through Troy, Olney, Marling, Middletown, Mount Carmel, Laddonia, Mexico and Paris. Bewick & Koch, Columbia, Mo., engineers. C. B. Duncan, president. [E. R. J., May 28, '10.]

**Lincoln (Neb.) Traction Company.**—This company has decided to survey for an extension from College View to Auburn. J. H. Humpe, Lincoln, general manager.

**Orange Mountain Traction Company, South Orange, N. J.**—This company has begun work on the extension of its line from its terminus at Northfield to Rock Spring.

**Alliance-Akron Railroad, Alliance, Ohio.**—A preliminary organization for the construction of the proposed 26-mile railway between Alliance and Akron has been effected by the election of Charles Keith, president, and Arthur Wright, secretary. [E. R. J., May 28, '10.]

**Minster & Loramie Railway, Minster, Ohio.**—This company, which was recently incorporated to build a railway from Loramie to Minster, has completed its organization by the election of the following officers: John Raterman, president; B. Wuebker, vice-president; Jos. Willman, secretary, and Julius Boesel, treasurer. It will connect with the Minster branch of the Western Ohio Railway at Minster and, it is said, will be operated as a part of that system. [E. R. J., Feb. 19, '10.]

**Portsmouth Street Railway & Light Company, Portsmouth, Ohio.**—It is reported that arrangements have been completed by this company to extend its line to Hanging Rock, below Ironton, to connect there with the Ohio Valley Electric Railway, Huntington, W. Va. Ultimately, it is believed these lines will extend the entire length of the Ohio River from Pittsburgh to Cincinnati. Construction on this extension will be started at an early date. R. D. York, Portsmouth, general manager.

**Enid (Okla.) City Railway.**—This company reports that within three months it expects to place a contract for building 1½ miles of new track and overhead work. C. H. Bosler, Dayton, Ohio, president.

**Oklahoma Public Service & Interurban Company, Stillwater, Okla.**—This company has let contracts to Daniel Sweeney & Company for grading, and to M. B. Ryan for bridge construction and culverts on its 14-mile railway to connect Stillwater, Yale, Morrison and Perkins. Headquarters, Stillwater. Officers: L. J. Lampke, president; Claude Powell, vice-president; F. A. Hoffman, purchasing agent; H. A. Campbell, assistant engineer, and R. A. Sturgeon, chief engineer. [E. R. J., April 2, '10.]

**Hanover & McSherrystown Street Railway, Hanover, Pa.**—This company has awarded the contract to John H. Dobbins for grading the extension of its line from McSherrystown to Conewago Chapel. At Conewago Chapel the proposed railway will branch, one line going to Gettysburg, the other to New Oxford. Robt. E. Manley, Hanover, general manager.

**Southern Cambria Railway, Johnstown, Pa.**—This company has started work at Ebensburg and Mineral Point on the extension of its line. At Mineral Point the line will branch off from the present road to South Fork. The line will extend from Mineral Point to Saltlick and Ebensburg. [E. R. J., May 7, '10.]

**West Shore Railway, Wilkesbarre, Pa.**—This company has been organized at Wilkesbarre and proposes the construction of a third-rail railway, 8 miles long, to connect Pittston, Forty Fort, Wyoming, Exeter, West Pittston and Wilkesbarre. Contracts for the work will be let within four weeks. There will be built 2000 ft. of trestle work about 10 ft. high. J. L. Dunn, 54 Public Square, Wilkesbarre, secretary. [E. R. J., Feb. 12, '10.]

**York (Pa.) Railways.**—It is stated this company will spend \$18,000 building a loop on Carlisle Avenue, Pennsylvania Avenue and West York Avenue. An equal amount will be expended in double-tracking West York Avenue. The company intends double-tracking Market Street. It is now finishing double-tracking West Market Street.

**Trinity Valley Traction Company, Dallas, Tex.**—This company advises that it has not yet been incorporated, and that it is now operating under the direction of a board of trustees. When preliminary arrangements have been completed a charter will be secured. It is the intention to begin work on the proposed 120-mile railway this fall. It will connect Dallas, Waxahachie, Ennis, Corsicana and Palestine. Power stations will be built at Dallas and near Corsicana. Headquarters, 304 Scollard Building, Main Street, Dallas. Capital stock to be \$3,000,000. Officers: J. V. Watkins, 304 Scollard Building, Dallas, president and general manager; J. J. Sears, Aledo, vice-president; W. W. Clopton, Corsicana, secretary. [E. R. J., May 28, '10.]

**\*Stamford, Tex.**—Messrs. Whyman & Barton, engineers, of Dallas and Amarillo, are promoting a plan to build an electric railway in Stamford.

**Ogden (Utah) Rapid Transit Company.**—This company has recently placed the following contracts for line material: Illinois Steel Company, 1250 tons of 40, 45 and 48-lb. rail; John A. Roebling's Sons Company, 210,000 lb. of copper wire; Ohio Brass Company, 25 miles of line material and 7 miles of rail bonds; American Steel & Wire Company, 14 miles of rail bonds.

**Bellingham-Skagit Railway, Bellingham, Wash.**—Preliminary surveys for this projected interurban railway have been completed and construction will be started soon. It will connect towns in Bellingham and Skagit County, and will be built by the Stone & Webster Engineering Corporation. R. T. Laffin, White Building, Seattle, engineer.

**\*Seattle, Wash.**—C. H. Shields, of the Spokane Grain & Fuel Company, Spokane, is said to be interested in the construction of an electric railway to extend from Seattle to North Seattle.

**Clarksburg & Weston Electric Railway, Clarksburg, W. Va.**—This company has awarded contracts to Ramage, Wolf & Company for the grading and concrete work, for the three bridges for 6 miles of its proposed 24-mile railway which is to connect Clarksburg and Weston. Construction

will start at once. James O. Watson, Fairmont, general manager. [E. R. J., May 28, '10.]

**Sabraton Railway, Morgantown, W. Va.**—This company will let contracts for the construction of its Dellslow extension and the Lake Erie extension in June. G. Gilmour Sturgiss, Morgantown, general manager.

#### SHOPS AND BUILDINGS

**British Columbia Electric Railway, New Westminster, B. C.**—This company expects to begin work at once building repair shops at the south end of Westminster Bridge, Westminster, for its Fraser Valley branch. D. J. McQuarrie, New Westminster, local manager.

**Connecticut Company, New Haven, Conn.**—This company is having plans drawn by Architects Foote & Townsend for a large addition to its car house in Fair Haven. The structure will be similar to the other car houses of the company, and will be 64 ft. x 104 ft., two stories high, of brick, and with a gravel roof.

**Indiana Union Traction Company, Anderson, Ind.**—Press reports state that this company is considering plans for the erection of a new station in Bluffton.

**Des Moines (Ia.) City Railway.**—The car house and shop of this company on West Second Street and Locust Street in Des Moines was completely destroyed by fire on June 2. Twenty-one cars were burned, entailing a loss of \$105,000; the car house was valued at \$15,000, and its machinery and equipment at \$5,000.

**Omaha & Council Bluffs Street Railway, Omaha, Neb.**—This company has sold its Harney Street car house in Omaha. The company will vacate the building on the completion of its new car house at Tenth Street and Pierce Street.

**Enid (Okla.) City Railway.**—This company advises it will place contracts soon for a new car house to have a storage capacity for 24 cars at Enid. C. H. Bosler, Dayton, Ohio, president.

#### POWER HOUSES AND SUBSTATIONS

**Capital Traction Company, Washington, D. C.**—This company will erect a new power station in Washington to have a 5500-kw capacity.

**Omaha & Council Bluffs Street Railway, Omaha, Neb.**—This company has started work on its new power house at Fifth Street and Jones Street in Omaha. The structure will be 144 ft. x 165 ft. and 90 ft. high. It will be constructed of steel and brick with tile trimmings. Estimated cost is \$300,000. Dichter & Jens, St. Louis, are engineers in charge. [E. R. J., Nov. 6, '10.]

**Atlantic City & Shore Railroad Company, Atlantic City, N. J.**—This company has shut down its New York Avenue power station and has made a contract with the West Jersey & Seashore Railroad to provide the necessary power for operation of cars in Atlantic City.

**Public Service Railway, Newark, N. J.**—This company expects to purchase two 4000-kw turbo-generators for a new plant to be erected at Perth Amboy. [E. R. J., June 4, '10.]

**Toledo Railways & Light Company, Toledo, Ohio.**—This company is considering the purchase of two 750-kw rotary converters.

**Galveston-Houston Railway, Houston, Tex.**—This company will build a power plant at Webster 70 ft. x 100 ft., two stories high, steel frame, with brick and concrete walls. It will install three 520-hp Babcock-Wilcox boilers, or an aggregate hp of 1560; one 1110-kw turbine, one 500-kw turbine and the necessary condensers, water heaters, feed pumps, air compressors, etc. Power will be stepped up to 33,000 volts for transmission to the three substations, which will be located respectively at about 8 miles south of the city limits of Houston, near Dickinson and Texas City Junction. They will be built with steel frames and brick construction. Work will start soon on the stations.

**Ogden (Utah) Rapid Transit Company.**—This company has purchased one 500-kw motor generator from the General Electric Company and one 300-kw generator set from the Allis-Chalmers Company.

**Fairmont & Clarksburg Traction Company, Fairmont, W. Va.**—This company has ordered a portable substation. S. B. Muller, Fairmont, chief engineer.

# Manufactures & Supplies

## ROLLING STOCK

**Knoxville Railway & Light Company, Knoxville, Tenn.,** expects to purchase 15 closed cars to be equipped with two 40-hp motors each.

**United Railroads, San Francisco, Cal.,** expects to issue specifications soon, through Ford, Bacon & Davis, New York, N. Y., for 100 cars.

**New York & Queens County Railway, Long Island City, N. Y.,** expects to purchase soon 25 60-hp double-motor equipments, including air brakes.

**Des Moines (Ia.) City Railway** has placed an order with the American Car Company for 25 cars to replace the 21 cars which were destroyed by fire on May 26.

**New York, New Haven & Hartford Railroad, New Haven, Conn.,** is preparing specifications for several multiple-unit steel cars for suburban service on its New York electric zone.

**Fairmont & Mannington Railroad, Fairmont, W. Va.,** has ordered two 40-ft. 6-in., open excursion motor cars, mounted on Brill No. 27 M.C.B. trucks, from the G. C. Kuhlman Car Company.

**Bangor Railway & Electric Company, Bangor, Me.,** has ordered one 30-ft. baggage car and two 30-ft. 8-in. semi-convertible cars, mounted on Brill No. 27 M.C.B. trucks, from The J. G. Brill Company.

**Elmira Water, Light & Railroad Company, Elmira, N. Y.,** noted in the *ELECTRIC RAILWAY JOURNAL* as having ordered six single-truck cars from The J. G. Brill Company, will have them built for pay-as-you-enter operation, and they will be mounted on Brill No. 21-E trucks.

**Fort Smith Light & Traction Company, Fort Smith, Ark.,** mentioned in the *ELECTRIC RAILWAY JOURNAL* of May 14, 1910, as contemplating the purchase of 12 Brill semi-convertible cars, has placed an order with the American Car Company for eight 20-ft. 8-in. semi-convertible cars.

**Winona Interurban Railway, Warsaw, Ind.,** is preparing to build two trailer express cars and a freight locomotive to be equipped with four 100-hp motors. The company has placed a contract with the Hicks Locomotive Works for five stock cars and five standard box cars.

**New York & North Shore Traction Company, Mineola, N. Y.,** has placed an order with The J. G. Brill Company for one centrifugal sprinkler car. The company has ordered from the G. C. Kuhlman Car Company one snow sweeper and two 30-ft. 8-in. semi-convertible cars of the pay-as-you-enter type, mounted on Brill No. 27 FE-1 trucks. The sweeper and sprinkler car will be equipped with two 75-hp GE motors each and the passenger cars with two 75-hp GE motors each.

**Long Island Railroad, Long Island City, N. Y.,** has ordered 100 additional steel motor passenger cars from the American Car & Foundry Company for 1911 delivery. The cars will seat 70 persons, will be 63 ft. 4¾ in. long over vestibules, 54 ft. 4½ in. body length; width overall, 9 ft. 11 in.; height from top of rail to sills, 41¾ in. The bodies will weigh approximately 53,000 lb. each. They will be equipped with Westinghouse Electric & Manufacturing Company's motors and Westinghouse Traction Brake Company's air brakes.

**Tacoma Railway & Power Company, Tacoma, Wash.,** is building eight cable cars and a wrecking car at its shops. It is also rebuilding nine of its 44-ft. cars, converting them into closed cars, with 6-ft. drop platforms at the rear for pay-as-you-enter operation. The cable cars, which are also of the pay-as-you-enter type, will be 32 ft. long overall, 8 ft. wide, 8 ft. 8 in. high from bottom of sill to trolley plank, and will have a seating capacity of 34. The wrecking car will be 42 ft. over end sills, 9 ft. wide, with cab 16 ft. long and 7 ft. 6 in. high built at one end, and will have Baldwin trucks and four GE No. 57 motors and Westinghouse AMM air brake equipment. It will be equipped with a 20-ton crane operated by a Westinghouse No. 49 motor.

**Houghton (Mich.) County Traction Company,** noted in the *ELECTRIC RAILWAY JOURNAL* of March 12, 1910, as having

ordered two closed motor cars from the G. C. Kuhlman Car Company, has specified the following details for this equipment:

|                                    |                                |
|------------------------------------|--------------------------------|
| Bolster centers, length,           | Control system.....K-28        |
| 19 ft. 7 in.                       | Curtain fixtures..Cur. S. Co.  |
| Length over corner posts,          | Curtain material.....Oakette   |
| 31 ft. 7 in.                       | Destination sign...sheet steel |
| Over vestibule....41 ft. 9 in.     | Gongs .....pedal               |
| Width over sills...8 ft. 2 in.     | Heaters.....Peter Smith        |
| Over posts at belt..8 ft. 2 in.    | Headlights .....Mosher         |
| Sill to trolley base..9 ft. 2¾ in. | Motors.....four GE-67          |
| Height top of rail to sills,       | Registers .....International   |
| 32¾ in.                            | Roofs.....monitor deck         |
| Body..... wood                     | Sanders.....four Brill         |
| Interior trim.....oak              | Sash fixtures.....Brill        |
| Bolsters, body..M.C.B. truss       | Seats.....Brill Winner         |
| Car trimmings.....bronze           | Trolley catchers....Wilson     |

## TRADE NOTES

**George A. Rees** has been elected second vice-president of the Chicago Pneumatic Tool Company, with headquarters in the Fisher Building, Chicago, Ill.

**Peter Smith Heater Company, Detroit, Mich.,** has secured a contract from the Cleveland (Ohio) Railway for 250 Peter Smith forced circulation hot water equipments.

**Northern Engineering Works, Detroit, Mich.,** has installed two 10-ton, hand-power, Northern cranes, having a 30 to 34-ft. span, in two of the Detroit United Railway's substations.

**Columbia Brake Shoe & Foundry Company, Cincinnati, Ohio,** has installed additional equipment in its New Richmond plant, to take care of its growing street railway brake shoe business.

**Egry Register Company, Dayton, Ohio,** reports that the Union Pacific Railroad has installed the Egry train despatching system on several of its divisions where telephones are used in the despatching service.

**Anchor Webbing Company, Woonsocket, R. I.,** is making a special open-work cotton-gauze tape for winding fields where the vacuum process is not used. This gauze tape is less expensive than linen or other tapes which are sometimes used, and is said to be better adapted to the purpose.

**Sanitary Rag Company, Kalamazoo, Mich.,** has under construction a five-story building which will have a floor area of over 60,000 sq. ft., and will be devoted to the manufacture of its products. It is expected that the company will employ over 200 hands in this building upon its completion.

**Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa.,** has arranged for the redemption of its \$6,000,000 collateral trust three-year notes, due in August, through the sale to Kuhn, Loeb & Company of \$4,000,000, three-year, 6 per cent notes, which, with \$2,000,000 in cash on hand, will suffice for the purpose.

**Harrison Engineering Company, New York, N. Y.,** has closed a contract with the Hudson & Manhattan Railroad for the complete heating and ventilating apparatus for its new car shops in Jersey City. The company has also closed a contract to install the Harrison aertube heater system in the new car shops of the New York, New Haven & Hartford Railroad at Middletown, Conn.

**J. F. Newell & Company, Gardiner, Maine,** reports the receipt of large orders for gray and malleable iron motor shells; also for bronze bearings. The company has recently begun the erection of a gray iron foundry, to be used in connection with its present brass foundry. This improvement will obviate the necessity of purchasing castings. The company will now be prepared to do considerable outside work in both foundries.

**Paragon Sellers Company, Chicago, Ill.,** announces that it has just taken over the business of the Durant Electric Supplies Company and F. W. Pardee, both of Chicago. The new company is organized on broader lines than its constituents and has adequate capacity and facilities for handling the rapidly increasing business now enjoyed. The officers of the company are: E. M. Platt, president; F. W. Pardee, vice-president; E. E. Dewey, secretary, and R. E. Macduff, treasurer.

**Crocker-Wheeler Company, Ampere, N. J.**, has sold two 3530-kva, 1500-r.p.m., 25-cycle, three-phase, 2300-volt a.c. turbo-generators to the Illinois Steel Company, to be installed by the Ball & Wood Company at the South works in Chicago. Excitation will be effected by two 35-kw, 125-volt, Crocker-Wheeler generators direct connected to the end of the generator shafts, the armature of each to be connected electrically with the turbo-generator field without any regulating resistance in its circuit. The alternators will be regulated by adjusting the strength of the exciter fields. There will be no disconnecting switch between the armature of the exciter and the field of the generator.

**Whipple Supply Company, New York, N. Y.**, has recently closed orders for the Hedley anti-climber with the following railways: Brooklyn Rapid Transit Company, 961 cars; Hudson & Manhattan Railroad, 100 cars; Metropolitan West Side Elevated Railway, Chicago, 25 cars. The above companies will use the old standard section of Hedley anti-climber which is now in service on the Interborough Rapid Transit Company, New York. Orders have also been closed with the Public Service Railway, Newark, N. J., for 100 cars; Cincinnati Traction Company, 50 cars; Syracuse Rapid Transit Company, 25 cars; Washington Water Power Company, Spokane, Wash., 20 cars; Buffalo & Lake Erie Traction Company, 5 cars. The last-named companies operating city surface cars will be equipped with the Hedley combination anti-climber drawhead. A large number of other roads are at the present time negotiating with the Whipple Supply Company for the equipment of their cars with the Hedley anti-climber.

#### ADVERTISING LITERATURE

**Duplex Metals Company, New York, N. Y.**, is mailing a blotter calling attention to the extensive use of its copper-clad steel wire.

**Hurley Track-Laying Machine Company, Chicago, Ill.**, is mailing a circular calling attention to the various features of its track-laying machine.

**Carb-Ox Company, Chicago, Ill.**, has issued a 16-page catalog illustrating and describing briefly the gas analysis instruments and allied specialties which it makes.

**Buck Boring Bar Company, Huntingdon, W. Va.**, has issued a small folder describing the features of the Buck expansion boring bar for boring steel and cast-iron wheels.

**Pittsburgh Track Specialty Company, Pittsburgh, Pa.**, is sending out several circulars which contain illustrations of its various types of rail joints, tie plates and cast-steel ties.

**Hess-Bright Manufacturing Company, Philadelphia, Pa.**, has issued a sheet on ball-bearings and their correct use. It is particularly devoted to ball-bearings for main car journals.

**Dayton Manufacturing Company, Dayton, Ohio**, has issued catalog No. 143, in which its new enameled iron sanitary closet for use on traction cars is illustrated and fully described.

**Felt & Tarrant Manufacturing Company, Chicago, Ill.**, has issued an illustrated 24-page catalog on its comptometer adding machine in which the many advantages of this machine are set forth.

**Clark Manufacturing Company, Grand Rapids, Mich.**, has printed a circular which contains a brief outline of the principles involved in the construction and operation of the Clark lightning arrester.

**Western Electric Company, New York, N. Y.**, in Bulletin No. 5210, describes in detail a new design of Hawthorn alternators for belt, engine and waterwheel drives, with and without direct-connected exciters.

**Stone & Webster Engineering Corporation, Boston, Mass.**, is distributing a card calling attention to its facilities for rapidly constructing large power plants. The enlargement of the power plant of the Boston Elevated Railway is cited as an instance where work was completed within 10 months, two months less than the contract required.

**National Tube Company, New York, N. Y.**, has issued a folder in which the advantages of the Kewanee union are emphasized. It also contains a list price of all patterns of this product. The company is mailing correction sheet No. 2 of catalog H for 1909, also a blotter calling attention

to the merits of the wrought double strap pipe saddle which it manufactures.

**Electric Storage Battery Company, Philadelphia, Pa.**, has printed in Bulletin No. 123 a paper entitled "Attitude of Central Stations Toward Electric Automobiles," which was read by James T. Hutchings, general manager, Rochester Railway & Light Company, Rochester, N. Y., before the first annual convention of the New England Section of the National Electric Light Association, Boston, Mass., March 16 and 17, 1910.

**Kennicott Water Softener Company, Chicago Heights, Ill.**, has issued a comprehensive catalog which covers its various products, and includes Bulletins Nos. 36 and 37 on Kennicott water weighers, which are of interest to power station managers. One of these bulletins, No. 36, contains descriptions, illustrations and other information concerning the type and size of this apparatus, and the other is devoted to its dimensions, drawings and prices.

**Allis-Chalmers Company, Milwaukee, Wis.**, has issued Bulletin No. 4022, which is descriptive of its lighting transformers. The small sizes of these transformers are of cast iron, while the larger are built with corrugated steel cases. They are guaranteed to carry ordinary overload not exceeding 25 per cent for two hours, and are tested at 150 per cent load for 20 minutes, so that temporary excessive loads will not injure them. The coil losses have been brought extremely low and the regulation is uniform.

**Niles Car & Manufacturing Company, Niles, Ohio**, has issued a catalog in which the various types of cars which it builds are described and illustrated. Several pages of the publication are devoted to a description of Baldwin trucks. There are presented also numerous engravings and drawings which show the standard shapes and sizes of wheels, and standard axles for motor and trailer trucks adopted by the American Street and Interurban Railway Engineering Association and the Master Car Builders' and Master Mechanics' Associations.

**North Dakota Metal Culvert Company, Fargo, N. D.**, has issued its first general catalog covering the entire line of products which it manufactures. The publication is divided into four sections. The first section contains information relative to prices, delivery, freight rates, sizes, capacities, etc., of its galvanized metal products. Sections 2 and 3 describe and illustrate galvanized metal culverts and galvanized steel portable bins. Section 4 is devoted to the various types of galvanized steel cans, tanks, etc., made by the company. Each description is accompanied by a table showing sizes, capacities and prices of these products.

**Trussed Concrete Steel Company, Detroit, Mich.**, has published two booklets containing specifications, one for reinforced concrete cement plastering and the other for waterproofing concrete and stucco. Another publication of the company, entitled "Hy-Rib," describes and illustrates the more general application of this material for roofs, floors, walls, sidings, partitions, ceilings, furring and conduits. Following this descriptive matter is printed a set of specifications and tables for the use of "Hy-Rib." Several letters from firms indorsing the use of this material are reproduced. Among the users are the Syracuse Rapid Transit Railway and the Utica & Mohawk Valley Railway.

**General Electric Company, Schenectady, N. Y.**, has issued Bulletins Nos. 4727, 4732, 4736, 4737, 4738, 4740, 4741 and 4742. In Bulletin No. 4727 two types of the company's sewing machine motors are illustrated and described. Bulletin No. 4732 is an attractive publication which contains more than 50 illustrations of installations of Curtis steam turbine-generators of various capacities. In Bulletin No. 4736 various types of arresters for alternating and direct-current, high and low-voltage circuits are described and illustrated. Bulletin No. 4737 is entitled "Electric Hardening Furnace." It contains sectional views of the furnace, diagrams of electrical connections and a chart which shows the power required to operate it. In Bulletin No. 4738 three sizes of polyphase, 60-cycle generators for use in small isolated plants are described. In Bulletin No. 4740 a line-drop compensator for alternating-current circuits is described. In Bulletin No. 4741 luminous arc lamps for multiple circuits are illustrated and described. In Bulletin No. 4742 the application of the induction motor to grain elevators and flour mills is described.